

SECTION 00 0101
PROJECT TITLE PAGE

1554 MINNEHAHA AVE. E. SPECIFICATION

BID SET 12/07/12



**INVEST SAINT PAUL INITIATIVE
NEIGHBORHOOD STABILIZATION PROGRAMS
AND REBUILDING PLAN 2009-2013**

OWNER

The Housing and Redevelopment Authority of Saint Paul, Minnesota
25 West Fourth Street, Saint Paul, MN 55102, Suite 1100
Roxanne Young
(651) 266-6581
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HRA Scope Writer

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423 Landmark Center, 75 West 5th Street, Saint Paul, MN 55102
Paul Ormseth
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HRA Construction Manager

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SECTION 00 4002
HRA BID INVITATION

PART 1 GENERAL

1.01 CONTACT TRANSLATION

- A. In Hmong - Ceeb toom. Yog koj xav tau kev pab txhais cov xov no rau koj dawb, Amy Filice 651-266-6568;
- B. In Spanish - Atención. Si desea recibir asistencia gratuita para traducir esta información, llame a Amy Filice 651-266-6568;
- C. In Somali - Ogow. Haddii aad dooneyso in lagaa kaalmeeyo tarjamadda macluumaadkani oo lacag la' aan wac, Amy Filice 651-266-6568.

1.02 PROJECT SUMMARY

- A. Project description: This is a Residential Renovation project located at 1554 E. Minnehaha Ave. This project is funded by Neighborhood Stabilization Program through the Housing and Redevelopment Authority of Saint Paul, Minnesota. This project is not required to conform to Federal and/or Little Davis Bacon requirements.

1.03 NOTICE TO PROSPECTIVE BIDDERS

- A. These documents constitute an invitation to bid to General Contractors for the construction of the project described within this bid manual.

1.04 OWNERSHIP INFORMATION

- A. The Owner, The Housing and Redevelopment Authority of Saint Paul, Minnesota, hereinafter, referred to as Owner.
- B. Owner's Project Manager: Roxanne Young
Address: 25 West Fourth Street, Saint Paul, MN 55102, Suite 1100
Phone Number: (651) 266- 6581
Email: roxanne.young@ci.stpaul.mn.us

1.05 OWNER'S CONSULTANT(S)

- Owner's Project Specification Consultant: Paul Ormseth, LLC
 - 1. Specification Writer's Name: Paul Ormseth
 - 2. Address: 423 Landmark Center, 75 West 5th Street, Saint Paul, MN 55102
 - 3. Phone Number: 612.715.5020
 - Email: paulormseth@gmail.com
- A. Owner's Construction Manager Consultant: Paul Ormseth, LLC
 - 1. Construction Manager's Name: Becca Hine
 - 2. Address: 423 Landmark Center, 75 West 5th Street, Saint Paul, MN 55102
 - 3. Phone: 651.253.2068
 - 4. Email: beccahine@gmail.com

1.06 IMPORTANT BID DATES

- A. Bids Issued: Friday, December 7, 2012
- B. Mandatory Pre-Bid Site Tour: Wednesday, December 12, 2012 from 1:00 p.m. to 2:30 p.m.
- C. **BID DUE DATE ON OR BEFORE:** Friday, December 21, 2012 at 2:00 p.m.
- D. Bid Delivery Location: The offices of The Housing and Redevelopment Authority of Saint Paul, Minnesota
Address: 25 West Fourth Street, Saint Paul, MN 55102, Suite 1100
Suite: 1100
- E. Public Bid Opening and Location: Friday, December 21, 2012 at 2:15 p.m. at the Housing and Redevelopment Authority of Saint Paul, Minnesota
Address: 25 West Fourth Street, Saint Paul, MN 55102, Suite 1100

- F. Executed Contract: Within 30 days of the bid award.
- G. Construction Start Date (Approximate): ASAP after contract execution
- H. Construction Completion Date: 150 days from the time of issued Notice to Proceed.

1.07 RIGHTS RESERVED BY THE OWNER

- A. The owner reserves the right to:
 - 1. Reject all bids received in response to this Bid Invitation, and at the Owner's discretion, issue a new Bid Invitation.
 - 2. Amend any portion of this Bid Invitation and disseminate such amendments to potential bidders in the same manner as the original Bid Invitation (eg newspaper, online posting). Bidders will be responsible for meeting the requirements of all amendments.
 - 3. Waive any minor irregularities in bids received.
 - 4. Disapprove any subcontractor proposed to be used by a bidder based on the subcontractor not being a responsible subcontractor and/or being on a debarment list.
 - 5. Select more than one bidder to perform various elements of the Project.

END OF BID INVITATION

SECTION 00 4003
HRA INSTRUCTIONS FOR BIDDERS

PART 1 GENERAL BID DIRECTIONS

1.01 Each Bidder shall fully inform him / herself and any subcontractors prior to bidding as to all existing conditions and limitations including compliance requirements under which the work is to be performed and shall include in the bid a sum to cover the cost of all items necessary to perform the work as set forth in the Bid Project Manual. The submission of a bid shall be construed as conclusive evidence that the Bidder has made such examination.

1.02 Bid Forms

- A. The Bid Submission forms are available online at <http://www.stpaul.gov/nsp>.
- B. Each bid must be submitted on the Bid Submission forms identified in the provided checklist. It is expected that the Contractor retain a copy of their entire submittal for their records. The copy of the bid submitted must be signed at every place that a signature is requested.

1.03 Corrections

- A. Erasures or other changes in the bid must be dated and initialed over the signature of the bidder.

1.04 Bid Envelope

- A. Place bid in envelope with the contractor name and address in the upper left-hand corner as the return address, and list the property address in the middle of the envelope as the addressee. Seal envelope.

1.05 Interpretations of Scope of Work

- A. Every request for an interpretation shall be in writing, unless otherwise documented by the Specification Writer. Questions will be taken until 3 days before bids are due.
- B. Interpretations will be in the form of an addenda which will be on file at the website, and in the offices of the Specification Writer at least three calendar days before bids are opened.
- C. It shall be the bidder's responsibility to make inquiry as to addenda issued.
 - 1. All such addenda shall become a part of the contract and all bidders shall be bound by such addenda.

1.06 Conflict with Documents

- A. When a conflict arises between the Drawings or the Scope of Work, the Drawings shall govern.

1.07 Materials Approved:

- A. Where items of equipment and material are specifically identified herein by a trade name, model or catalog number, only such specified items may be used in the base bid.
- B. Contractors desiring approval of substitute products may submit data cut sheets and product information for approval during the bidding cycle.
- C. Contractors will be notified only by addendum of additional approved products.
- D. Material identifications made in work specifications are considered as minimal quality for acceptance in bidding and installation.

1.08 Allowances:

- A. The Contractor shall include in the bid proposal the cash allowances listed.
- B. Unless otherwise indicated, the lump sum amount shall be for the material / product.
- C. Labor to install the material / product must be submitted separately.

1.09 Alternates:

- A. The Contractor must submit bids for each alternate listed in the Alternates List.

- B. If pricing is not listed for Alternates the bid may be disqualified.

1.10 Time for Receiving Bids:

- A. Bids are to be delivered to the HRA's office.
- B. Bids received prior to the time of opening will be securely kept.
- C. Bids received by phone or fax will not be considered.
- D. Modification of bids already submitted will be considered if received prior to the hour set for receiving the bids and written confirmation of such modification - with the signature of the bidder - is placed in the mail and postmarked and / or delivered to the HRA prior to the time set for bid opening.

1.11 Opening of Bids:

- A. At the time and place fixed for the opening of bids, every bid received within the time fixed for receiving bids will be opened irrespective of any irregularities.
- B. The opening of the bids will be an "open process" (open to the public).

1.12 Withdrawal of Bids:

- A. Bids may be withdrawn in writing, by phone, or by fax prior to the time fixed for opening; provided that written confirmation of any phoned or faxed withdrawal is placed in the mail and postmarked and / or delivered prior to the time set for bid opening.
- B. Negligence on the part of the bidder in preparing their bid confers no right of withdrawal or modification of his bid after such bid has been opened.

PART 2 BID ANALYSIS PROCESS

2.01 Contractor Selection Date: Earliest Practical Date

- A. This project is funded by the Neighborhood Stabilization Program (NSP), a federal stimulus program created to rehabilitate vacant housing or construct new housing on vacant lots within targeted areas of the City of Saint Paul.
- B. The Housing and Redevelopment Authority of Saint Paul, Minnesota reserves the right to check the qualifications of contractors for each project; previous experience working on projects with the Housing and Redevelopment Authority of Saint Paul, Minnesota, will not automatically deem a contractor qualified.

2.02 Minimum Contractor Qualifications

- A. Please note the following minimum qualifications that apply to all bidders:
 - 1. **Quality Workmanship and Qualifications**
 - a. Three references from jobs with similar work (include on Contractor Qualification form)
 - b. Two financial references (included on Contractor Qualification Form)
 - c. At least 2 years of experience as a General Contractor (HRA will verify--provide GC license number in the bid documents)
 - d. Review of standing with Secretary of State, Federal Excluded Parties list, City of Saint Paul Debarment list, Department of Labor and Industry, Better Business Bureau (HRA will verify)
 - e. Houses with historic features or located within a historic district may require demonstration of quality workmanship for historic renovation at the discretion of HRA staff.
 - 2. **Financial Capacity**
 - a. Demonstrated ability to pay two months of construction costs for each project awarded (these amounts are added together if more than one project is under construction). Financial capacity documentation must be in the name of the General Contractors organization or the principal of that organization.
 - 1) For a 120 day project, the contractor shall demonstrate the ability to pay 50% of bid amount.

- 2) For a 90 day project, the contractor shall demonstrate the ability to pay 65% of the bid amount.
- 3) Demonstration of capacity can be in the form of:
 - (a) Line of credit from banking or lending institution
 - (b) Cash balances from banking or lending institution
3. **Ability to Perform**
 - a. Up-to-date submittals to Affirmative Action, Section 3, and Vendor Outreach programs.
 - b. Adherence to timelines confirmed from professional references.
 - c. Use of certified subcontractors for environmental remediation including:
 - 1) Insulation: contractor must be on Xcel Energy approved contractor list
 - 2) Asbestos: contractor must be certified for asbestos removal by the State of Minnesota
 - 3) Lead: either general contractor or subcontractor must be certified for lead abatement by the State of Minnesota
 - 4) Radon: contractor must be on Minnesota Department of Health approved radon mitigation list.
4. **Bid Award Policy**
 - a. Contractors that meet the criteria for qualification above, yet have not worked with The Housing and Redevelopment Authority of Saint Paul, Minnesota on a Neighborhood Stabilization Program project previously will initially be awarded one house, even if the contractor is low bidder for more than one house.
 - b. Once the contractor demonstrates quality workmanship, financial capacity, and ability to perform timely completion, they may be awarded more than one house at the same time for subsequent bids on a case-by-case basis.
5. **Other Qualifications**
 - a. Each property has its own unique characteristics and challenges. Variables include items relating to environmental conditions, historic nature of structures, etc.
 - b. Depending on the specific property, there may be other qualifications needed by the bidder which will be specified by the HRA in its request for bids.

PART 3 POST AWARD REQUIREMENTS

3.01 CONSTRUCTION CONTRACT REQUIREMENTS

- A. The bidder agrees that, if selected by the HRA, the bidder will enter into a contract with the HRA no later than 30 calendar days from bid award and will submit the following information to the HRA as a condition to entering into that contract; refer to Bid Rehab Manual for attachments:
 1. Certificates of Insurance as required by the Construction Contract and proof of Insurance and Bonding.
 2. Final Sworn Construction Statement Affidavit and Sworn Construction Statement that list contractors, material suppliers, and subcontractors, who will work under the contract and the cost of their work.
 3. Proof of a valid license as a Residential builder in the State of Minnesota and proof of valid licenses as required by the City of Saint Paul for work to be done.
 4. Bidders may be required to submit payment and performance bonds as a condition of the construction contract. Verify with Scope Writer prior to submitting bid.
 5. Proof of compliance with requirements attached for Affirmative Action, Vendor Outreach Program, and Section 3, including an Acknowledgement and Final Section 3 Action Plan.
 6. Construction Schedule must be submitted to the Insert Construction Management Firm Name to enter into the Contract.
- B. Attendance of a Pre-Construction Conference
 1. The selected Contractor and all Subcontractors will be required to attend a Pre-Construction Conference.

2. Time, date, and place of the Pre-Construction Conference will be announced by the Insert Construction Management Firm Name and/or HRA.
- C. Computerized System for Compliance Tracking and Reporting:
 1. The Contractor is required to use the B2Gnow/LCPtracker reporting system. Refer to attachment.

PART 3 WAGE REQUIREMENTS

4.01 The following are wage requirements associated with this Projects

- A. Federal Davis-Bacon and/or Little Davis-Bacon Wages are not required for this project.

END OF SECTION

SECTION 00 4101
HRA BID SUBMISSION DOCUMENTS

SECTION 1 GENERAL

1.01 BID SUBMISSION DOCUMENTS, LOCATED AT [HTTP://WWW.STPAUL.GOV/NSP](http://www.stpaul.gov/NSP)

- A. Bid Submittal Checklist
- B. Bid Cover Sheet
- C. Bid Proposal and Non-Collusive Affidavit
- D. Preliminary Section-3 Action Plan
- E. Contractor Application / Statement of Qualifications
- F. Itemized Cost Breakdown and Scope of Work Bid (Section 004102)

END OF SECTION

**SECTION 00 4102
LINE ITEM BID SHEET**

PART 1 MANUAL BID SHEET - LINE ITEM BREAKDOWN OF WORK

DIVISION 01 - GENERAL REQUIREMENTS

01 0010 – HRA General Requirements \$ _____

DIVISION 02 - EXISTING CONDITIONS

02 4100 - Demolition \$ _____

02 8200 - Asbestos Remediation \$ _____

02 8313 – Lead Hazard Control Activities \$ _____

DIVISION 03 - CONCRETE

03 3000 - Cast in Place Concrete \$ _____

DIVISION 04 - MASONRY

04 0100 - Maintenance of Masonry \$ _____

04 2300 - Glass Unit Masonry \$ _____

DIVISION 06 - WOOD, PLASTICS AND COMPOSITES

06 1000 - Rough Carpentry \$ _____

06 2000 - Finish Carpentry \$ _____

DIVISION 07 - THERMAL AND MOISTURE PROTECTION

07 2113 - Rigid Foam Insulation \$ _____

07 2119 - Foamed-In-Place Insulation \$ _____

07 2126 - Blown Insulation \$ _____

07 2500 - Weather Barriers \$ _____

07 2700 - Air Barrier System \$ _____

07 3113 - Asphalt Shingles \$ _____

07 4620 - Fiber Substrate Siding \$ _____

07 6200 - Sheet Metal Flashing and Trim \$ _____

07 7123 - Manufactured Gutters and Downspouts \$ _____

DIVISION 08 - OPENINGS

08 0150 - Restoration and Maintenance of Windows \$ _____

08 1429 - Wood Doors \$ _____

08 1613 - Fiberglass Doors \$ _____

08 3323 - Overhead Garage Door \$ _____

08 5169 - Metal Storm Windows \$ _____

08 5313 - Vinyl Windows \$ _____

DIVISION 09 - FINISHES

09 0120 - Repair of Plaster and Gypsum Board \$ _____

09 0160 - Hardwood Flooring Restoration \$ _____

09 2116 - Gypsum Board Assemblies \$ _____

09 3000 - Tiling \$ _____

09 6219 - Laminate Flooring	\$ _____
09 6800 - Carpeting	\$ _____
09 9000 - Painting and Coating	\$ _____
09 9723 - Concrete and Masonry Coatings	\$ _____
DIVISION 10 - SPECIALTIES	
10 5623 - Closet Storage Shelving	\$ _____
DIVISION 11 - EQUIPMENT	
11 3100 - Residential Appliances	\$ _____
DIVISION 12 - FURNISHINGS	
12 1110 - Mail Box and House Numbers	\$ _____
12 1211 - Bathroom Furnishings	\$ _____
12 3530 - Residential Casework	\$ _____
DIVISION 22 - PLUMBING	
22 3000 - Plumbing Equipment	\$ _____
22 4000 - Plumbing Fixtures and Piping	\$ _____
DIVISION 23 - HEATING, VENTILATING AND AIR CONDITIONING	
23 0000 - Residential Ventilation	\$ _____
23 5400 - Forced Air Furnace and Ducts	\$ _____
23 6213 - Forced Air A/C	\$ _____
DIVISION 26 - ELECTRICAL	
26 1001 - Power, Wiring and Devices	\$ _____
26 5101 - Lighting	\$ _____
DIVISION 28 - ELECTRONIC SAFETY AND SECURITY	
28 1600 - Intrusion Detection	\$ _____
DIVISION 31 - EARTHWORK	
31 2200 - Grading	\$ _____
DIVISION 32 - EXTERIOR IMPROVMENTS	
32 1313 - Concrete Paving	\$ _____
32 9223 - Sodding	\$ _____
32 9300 - Planting	\$ _____

END OF SECTION

SECTION 01 0010
HRA GENERAL REQUIREMENTS

PART 1 GENERAL

1.01 CONTRACTOR'S RESPONSIBILITY

- A. All labor, material, supplies, tools, or other costs or items needed for complete construction of the project, including permits, temporary facilities, safety, security and utilities during construction, are the responsibility of the Contractor.
- B. The General Contractor and each Subcontractor shall inspect the existing conditions that affect its work before starting. Commencing work signifies acceptance of the previous work. All measurements and dimensions indicated in the Drawings and Specifications are to be verified prior to bid submittal and construction.
- C. The General Contractor is responsible for maintenance of the lawn and landscaping, clean up and disposal of fallen leaves and snow removal during the winter. This responsibility begins at the issuance of the notice to proceed and ends with approval of Final Completion.
- C. The General Contractor shall be responsible for the coordination of all subcontractors working on, or furnishing material for use on this project. In addition, the General Contractor shall be responsible for the coordination of all work performed under separate contracts.

1.02 CONTRACTOR'S USE OF PREMISES

- A. During the construction period the General Contractor and its Subcontractors shall have full use of the premises for construction operations, including use of the site. All use of the site shall be under control and supervision of the General Contractor.
- B. General Contractor and its Subcontractors will be limited to construction work between the hours of 7:00 am and 6:00 pm on weekdays and 8:00 am to 4:00 pm on Saturday. Work at any other times will be allowed only with the Owner's and Project Manager's consent.

1.03 MATERIALS & MATERIAL STORAGE

- A. The General Contractor shall provide all materials, hardware, and fixtures required to accomplish the Scope of Work, unless otherwise indicated.
- B. The General Contractor shall use materials specified throughout unless approved in writing by Owner and Project Manager before ordering and installing.
- C. The General Contractor is responsible for verification of all measurements. Materials transported to the job site and stored are the General Contractor's responsibility until installed and accepted by the Owner and Project Manager.
- D. The General Contractor shall deliver, store, and handle products according to the manufacturer's recommendations, using means and methods that will prevent damage, deterioration, and loss, including theft.
- E. Damaged or stolen materials and equipment must be replaced as part of the work at no additional cost to the Owner. Damaged property that is removed shall belong to the General Contractor, unless otherwise stated in writing.

PART 2 PERFORMANCE REQUIREMENTS

2.01 ENERGY and RESOURCE CONSERVATION, see Section 01 8113 SUSTAINABLE DESIGN REQUIREMENTS

PART 3 PRICE AND PAYMENT PROCEDURES

3.01 SCHEDULE OF VALUES

- A. Form to be used: Sworn Construction Statement.

3.02 APPLICATIONS FOR PROGRESS PAYMENTS

- A. Payment Period: Submit at intervals stipulated in the Agreement.

- B. Execute certification/pay application by signature of authorized officer.
- C. Submit two copies of each Application for Payment to Construction Manager.

PART 4 CONTRACT MODIFICATION PROCEDURES

4.01 HRA WINTER WORK POLICY

- A. The Housing and Redevelopment Authority of the City of St. Paul (HRA) recognizes that there are weather related exterior items that cannot be completed in winter conditions ("Weather Conditional Work"), including but not limited to:
 - 1. Exterior painting
 - 2. Sod
 - 3. Foundation plantings
 - 4. Rain garden installation
 - 5. Concrete sidewalks, steps, landings, curbs, garage slabs, and asphalt driveways
- B. The HRA defines winter conditions as "temperatures consistently below a high of 50 degrees Fahrenheit". Winter conditions are typically in effect from November 15th through April 15th each year, although there is potential for an earlier or later start and end date depending on weather.
- C. In the case of NSP homes where a notice to proceed is issued between October and February, the time parameter of winter conditions could mean that the entire timeline for construction completion (typically 90-120 days) is within winter conditions.
- D. It is the responsibility of the contractor to communicate, to the Owner, the exterior line items in the scope of work that are Weather Conditional Work as a component of the timeline submission required prior to issuance of a notice to proceed.
- E. Contractors are also responsible for ensuring that all Weather Conditional Work is completed within the manufacturer's or industry standards recommended temperature range.
- F. The Contractor is responsible for prioritizing Weather Related Work when winter conditions are not present, in order to complete the house within the construction timeline whenever possible.
- G. The HRA's objective is to ensure that remodeling work on NSP projects is substantially complete within the timeline for construction completion (90-120 days) so that the project can be issued a certificate of occupancy and sold to a new homeowner; the contractor is responsible for ensuring that temporary, structurally sound solutions are implemented when Weather Related Work will effect the ability to secure a Certificate of Occupancy.
- H. In the event that winter conditions are present throughout the 120 day construction contract period, the HRA will escrow 1 and 1/2 times the cost for Weather Conditional Work (150%), to be completed within 30 days of the end of winter conditions.

4.02 SUBSTITUTIONS

- A. Changes in products, materials, equipment, and methods of construction required by the Contract Documents proposed by the General Contractor after award of the Contract are considered to be requests for substitutions.
- B. Submit requests according to procedures required for change-order proposals.
- C. Substitution requests shall include a complete list of changes or modifications needed in the Scope of Work in order to accommodate the proposed substitution.
- D. Provide samples and product data, including drawings and descriptions of products as well as fabrication and installation procedures, where applicable or where requested by the Owner or Project Manager.
- E. Indicate the substitution's effect on the Contractor's Construction Schedule, if any. Indicate cost information, including a proposal of the net change, if any, in the Contract Sum. Acceptance will be in the form of a written Change Order signed by the Owner and Project Manager.

PART 5 COMPLIANCE INFORMATION AND REQUIREMENTS

5.01 See HRA NSP website for compliance requirements.

- A. <http://www.stpaul.gov/nsp>
- B. Review the document labeled: Section II - Compliance Information and Requirements.
 - 1. It contains additional information on:
 - a. Insurance
 - b. B2Gnow/LCP Tracker, Contract Compliance Monitoring System
 - c. Vendor Outreach Program
 - d. Affirmative Action
 - e. Sustainable Green Policy
 - f. Section 3
 - g. Two Bid Policy
 - h. Limited English Policy
 - i. Xcel Energy Participating Contractors' List
 - j. Radon Mitigation Contractors' List

5.02 SECURITY PROCEDURES

- A. General Contractor is responsible for maintaining security of the site, including:
 - 1. locking buildings at the end of each work day;
 - 2. boarding window or door openings;
 - 3. installing security fencing;
 - 4. providing temporary barricades, bracing or railings;
 - 5. and any other work or facilities necessary to maintain a safe and secure site, including compliance with all health, safety, building, and other codes and laws.
- B. Any tools or materials or other property stored on the site prior to installation are the responsibility of the General Contractor and its Subcontractors are responsible for insuring their own such property against loss by theft or other cause.

5.03 JOB CONDITIONS

- A. The General Contractor shall notify the Owner and Project Manager of repair not covered in the Scope of Work that is necessary for satisfactory completion of the Project.
- B. Defects that become evident as work progresses shall be reported not concealed.
- C. Ensure safe passage of all employees during the course of demolition or other persons as necessary by erecting barriers, bracing, or other temporary supports as required.

5.04 SAFETY AND CLEAN UP

- A. The General Contractor must keep the site clean at all times during construction.
- B. In no event can debris be stored outside overnight unless it is inside a dumpster.
- C. All floors are to be picked up and kept broom clean at the end of the work day.
- D. No combustible debris shall be thrown, stored, or burned on the property, adjacent parcels, sidewalks, streets, or alleys.
- E. Debris created from work at the property must be disposed of immediately.
- F. Any debris caused by the General Contractor or its Subcontractor shall be removed from the work area in the General Contractor's containers and disposed of off site by the General Contractor.

PART 6 SPECIAL PROCEDURES

6.01 ASBESTOS ABATEMENT, see Asbestos Remediation Section 02 8200

6.02 VOLATILE ORGANIC COMPOUND CONTENT RESTRICTIONS, see Section 01 6116

6.03 LEAD BASED PAINT, see Lead Hazard Control Activities Section 02 8313

6.04 WASTE MANAGEMENT, see section 01 7419

PART 7 SUBMITTALS

7.01 GENERAL

- A. Coordinate preparation and processing of submittals with performance of construction activities.
- B. Transmit each submittal sufficiently in advance of performance of related construction activities to avoid delay.
- C. Prior to submitting any samples and product data, contractor shall review and approve data for compliance with project requirements. Contractor shall stamp data and shop drawings as approved by its entity before submitting to Construction Manager for review.
- D. Submit product data for review in triplicate (one each to be retained by Construction Manager and Owner, and one returned after review to Contractor)
- C. Provide the following submittals required for performance of the Work, including the following:
 - 1. Administrative Submittals.
 - 2. Construction Schedule
 - 3. Samples/Product Data.

7.02 ADMINISTRATIVE SUBMITTALS

- A. Provide as required in the Contract Documents. Such submittals include, but are not limited to, the following:
 - 1. Sworn Construction Statement
 - 2. Required permits.
 - 3. Applications for Payment.
 - 4. Insurance certificates.
 - 5. List of subcontractors.
 - 6. Proof of qualifications for Asbestos and Lead remediation

7.03 CONSTRUCTION SCHEDULE

- A. A construction schedule must be submitted to the Owner and Project Manager with the bid, unless requested otherwise in writing. Construction shall be completed within 120 days of notice to proceed.

7.04 SAMPLES, PRODUCT DATA AND SHOP DRAWINGS:

- A. Submit Samples as specified to be physically identical with the material or product proposed.
- B. Samples include partial sections of manufactures or fabricated components, cuts or containers of materials, color range sets, and swatches showing color, texture, and pattern.
- C. Provide product samples, product data and/or shop drawings for the following where included in the scope of work and for any other requirements mentioned in the specifications or drawings:
 - 1. Paint colors
 - 2. Stucco sample
 - 3. Windows
 - 4. Doors and hardware
 - 5. Kitchen cabinets product data and shop drawings
 - 6. Plumbing fixtures
 - 7. Lighting fixtures
 - 8. Stair railings
 - 9. Tile
 - 10. Interior trim samples

11. Exterior trim and siding samples (garage)
12. Window order
13. Sketch site plan showing areas of yard to be disturbed by equipment and location of materials storage.

END OF SECTION

SECTION 01 2000
PAYMENT PROCEDURES

PART 1 GENERAL

1.01 PAYMENT DOCUMENTS

- A. All documents required to create a complete Payment Application can be downloaded from <https://sites.google.com/site/nspconstructiondocs/>
- B. Payment Application form to be used: Application and Certificate for Payment provided by the HRA.
 - 1. Columns A, B, C should not change during the course of construction and should directly relate to the Sworn Construction Statement provided at the start of construction. As draws progress, columns D, E and F change to reflect work completed.
- C. Additional Documents to be submitted with each pay application:
 - 1. Monthly Employment Utilization (MEU) Form
 - 2. Identification of Prime and Subcontractor Form
 - a. An updated Sub ID sheet must be attached to help HR/EEO staff track subcontractor utilization.
 - 3. B2Gnow
 - a. Ensure each subcontractor is logging into the B2Gnow system and logging payments received.

1.02 APPLICATIONS FOR PROGRESS PAYMENTS

- A. Payment Period: Submit at intervals stipulated in the Agreement. The Owner will process the payment within 30 days.
- B. Applications for payment must be signed by an authorized officer of the general construction firm
- C. Use data from approved Sworn Construction Statement. Provide dollar value in each column for each line item for portion of work performed .
- D. Submit one signed copy of the Application for Payment, complete with all required attachments, to the Construction Manager.

1.03 MODIFICATION PROCEDURES

- A. For minor changes not involving an adjustment to the Contract Price or Contract Time, Construction Manager will issue instructions directly to Contractor.
- B. Execution of Change Orders: Construction Manager will issue Change Orders for signatures of parties as provided in the Conditions of the Contract.
- C. After execution of Change Order, promptly revise Application for Payment forms to record each authorized Change Order as a separate line item and adjust the Contract Price.
 - 1. Change orders shall be listed as lump sums on the bottom of the pay application and referred to on the cover sheet.
 - 2. Include each line item of the change order as a separate line item in the pay application and the amount of the contractor adjustments.

1.04 APPLICATION FOR FINAL PAYMENT

- A. Prepare Application for Final Payment as specified for progress payments, identifying total adjusted Contract Price, previous payments, and sum remaining due.
- B. Additional documents:
 - 1. Final lien waivers from all subcontractors/material providers
 - 2. Monthly Employment Utilization (MEU) Form
 - 3. Project Employment Utilization (PEU) for City Funded Projects
 - 4. Lead Clearance
 - 5. NEC Certificate of Completion

6. Waste Management Plan Report
 7. Permit Sign-offs/Certificate of Code Compliance
 8. Winter Work/Weather Related Work Escrow
 9. Certificate of Substantial/Final Completion
- C. See Section 01 7700 - Closeout Procedures and Submittals, for additional information.

END OF SECTION

SECTION 02 2300
ALTERNATES

PART 1 GENERAL

1.01 ACCEPTANCE OF ALTERNATES

- A. Alternates quoted on Bid Forms will be reviewed and accepted or rejected at Owner's option. Accepted alternates will be identified in the Owner-Contractor Agreement.
- B. Coordinate related work and modify surrounding work to integrate the Work of each alternate.

1.02 SCHEDULE OF ALTERNATES

A. Alternate #1:

Replace front stoop with new cast-in-place stoop with same dimensions and configuration. Stair treads at new stoop shall provide drainage away from house foundation. Work includes:

- 1. Demolition conforming to Section 02 4100.
- 2. Cast-in-place concrete conforming to Section 03 3000, including new frost footing.
- 3. New steel pipe handrail conforming to requirements of MN building code/IRC.

B. Alternate #2:

In lieu of installing new siding over existing stucco, remove existing stucco, lath and underlayments to bare wood sheathing and install new weather barrier, siding and trim. Work includes:

- 1. Demolition conforming to Section 02 4100. Remove stucco, lath and underlayments. Remove as much of existing original wood eave detail as is required to properly terminate the weather barrier at the top of the wall. Remove all existing exterior door and window casings.
- 2. Weather barrier conforming to Section 07 2500. Apply weather barrier to entire house exterior.
- 3. Install exterior trim, fascias, soffits, bargeboards, casings at openings in conformance with Section 06 2000, except apply materials directly to the wall sheathing (over weather barrier) instead of on furring over the stucco. Replicate the configuration of the existing metal siding, fascias and soffits, boxing around the existing original features of the house
- 4. Install siding at the entire house exterior in conformance with Section 07 4620, apply materials directly to the wall sheathing (over weather barrier) instead of on furring over the stucco. Replicate the configuration of the existing metal siding.
- 5. At front porch install siding at interior and exterior, as described in the base bid.

END OF SECTION

SECTION 01 6000
PRODUCT REQUIREMENTS

PART 1 GENERAL

1.01 SUBMITTALS

- A. Product Data Submittals: Submit manufacturer's standard published data. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information specific to this Project.

PART 2 PRODUCTS

2.01 EXISTING PRODUCTS

- A. Unforeseen historic items encountered remain the property of the Owner; notify Owner promptly upon discovery; protect, remove, handle, and store as directed by Owner.

2.02 NEW PRODUCTS

- A. Provide new products unless specifically required or permitted by the Contract Documents.

2.03 PRODUCT OPTIONS

- A. Products Specified by Reference Standards or by Description Only: Use any product meeting those standards or description.

PART 3 EXECUTION

3.01 SUBSTITUTION PROCEDURES

- A. Instructions to Bidders specify time restrictions for submitting requests for substitutions during the bidding period. Comply with requirements specified in this section.
- B. Document each request with complete data substantiating compliance of proposed substitution with Contract Documents.
- C. A request for substitution constitutes a representation that the submitter:
 - 1. Has investigated proposed product and determined that it meets or exceeds the quality level of the specified product.
 - 2. Will provide the same warranty for the substitution as for the specified product.
 - 3. Will coordinate installation and make changes to other Work that may be required for the Work to be complete with no additional cost to Owner.
 - 4. Waives claims for additional costs or time extension that may subsequently become apparent.
- D. Substitution Submittal Procedure:
 - 1. Submit two copies of request for substitution for consideration. Limit each request to one proposed substitution.
 - 2. Submit shop drawings, product data, and certified test results attesting to the proposed product equivalence. Burden of proof is on proposer.
 - 3. The Construction Manager will notify Contractor in writing of decision to accept or reject request.

END OF SECTION

SECTION 01 6116

VOLATILE ORGANIC COMPOUND (VOC) CONTENT RESTRICTIONS

PART 1 GENERAL

1.01 SUMMARY

- A. Implement the following procedures in an effort to improve indoor air quality during Owner's occupancy.
- B. Construction Indoor Air Quality (IAQ) Management
 - 1. Provide low-emitting products

1.02 DEFINITIONS

- A. VOC-Restricted Products: All products of each of the following categories when installed or applied on-site in the building interior:
 - 1. Adhesives, sealants, and sealer coatings.
 - 2. Carpet.
 - 3. Carpet cushion.
 - 4. Resilient floor coverings.
 - 5. Wood flooring.
 - 6. Paints and coatings.
 - 7. Insulation.
 - 8. Gypsum board.
 - 9. Acoustical ceilings and panels.
 - 10. Cabinet work.
 - 11. Wall coverings.
 - 12. Composite wood and agrifiber products used either alone or as part of another product.
 - 13. Other products when specifically stated in the specifications.
- B. Interior of Building: Anywhere inside the exterior weather barrier.
- C. Adhesives: All gunnable, trowelable, liquid-applied, and aerosol adhesives, whether specified or not; including flooring adhesives, resilient base adhesives, and pipe jointing adhesives.
- D. Sealants: All gunnable, trowelable, and liquid-applied joint sealants and sealant primers, whether specified or not; including firestopping sealants and duct joint sealers.

PART 2 PRODUCTS

2.01 MATERIALS

- A. All VOC-Restricted Products: Provide products having VOC content of types and volume not greater than those specified in State of California Department of Health Services Standard Practice for the Testing of Volatile Organic Emissions From Various Sources Using Small-Scale Environmental Chambers.
 - 1. Evidence of Compliance: Acceptable types of evidence are:
 - a. Current GREENGUARD Children & Schools certification; www.greenguard.org.
 - b. Current Carpet and Rug Institute Green Label Plus certification; www.carpet-rug.org.
 - c. Current SCS Floorscore certification; www.scscertified.com.
 - d. Current SCS Indoor Advantage Gold certification; www.scscertified.com.
 - e. Product listing in the CHPS Low-Emitting Materials Product List at www.chps.net/manual/lem_table.htm.
 - f. Current certification by any other agencies acceptable to CHPS.
 - g. Report of laboratory testing performed in accordance with CHPS requirements for getting a product listed in the Low-Emitting Materials Product List; report must include laboratory's statement that the product meets the specified criteria.
- B. Adhesives and Joint Sealants: Provide only products having volatile organic compound (VOC) content not greater than required by South Coast Air Quality Management District Rule No.1168.
 - 1. Evidence of Compliance: Acceptable types of evidence are:

- a. Report of laboratory testing performed in accordance with requirements.
 - b. Published product data showing compliance with requirements.
 - c. Certification by manufacturer that product complies with requirements.
- C. Aerosol Adhesives: Provide only products having volatile organic compound (VOC) content not greater than required by GreenSeal GS-36.
 - 1. Evidence of Compliance: Acceptable types of evidence are:
 - a. Current GreenSeal Certification.
- D. Paints and Coatings applied within building waterproof envelope:
 - 1. Comply with VOC Content limits (as noted in Criterion 6.1) of Green Seal Standard GS-11 "Paints," First Edition; Standard GC-03 "Anti Corrosive Paints," and MPI GPS-2-8, as follows (in grams/Liter):
 - a. Flat: 50
 - b. Non-flat: 50
 - c. Anti-Corrosive and Anti Rust: 250
 - d. Floor Coatings: 100
- E. Carpet and Adhesive: Provide products having VOC content not greater than that required for CRI Green Label Plus certification.
 - 1. Evidence of Compliance: Acceptable types of evidence are:
 - a. Current Green Label Plus Certification.
 - b. Report of laboratory testing performed in accordance with requirements.
- F. Carpet, Carpet Cushion, and Adhesive: Provide products having VOC content as specified in Section 09 6800.
- G. Carpet Cushion: Provide products having VOC content not greater than that required for CRI Green Label Plus certification.
 - 1. Evidence of Compliance: Acceptable types of evidence are:
 - a. Current Green Label Plus Certification.
 - b. Report of laboratory testing performed in accordance with requirements.
- H. Composite Wood and Agrifiber Products and Adhesives Used for Laminating Them: Provide products having no added urea-formaldehyde resins.
 - 1. Evidence of Compliance: Acceptable types of evidence are:
 - a. Current SCS "No Added Urea Formaldehyde" certification; www.scscertified.com.
 - b. Published product data showing compliance with requirements.
 - c. Certification by manufacturer that product complies with requirements.
- I. Other Product Categories: Comply with limitations specified elsewhere.

PART 3 EXECUTION

3.01 GENERAL

- A. Incorporate procedures and processes during construction and prior to occupancy as described herein

END OF SECTION

SECTION 01 7000
EXECUTION REQUIREMENTS

PART 1 GENERAL

1.01 PROJECT CONDITIONS

- A. Grade site to drain. Maintain excavations free of water. Provide, operate, and maintain pumping equipment.
- B. Ventilate enclosed areas to assist cure of materials, to dissipate humidity, and to prevent accumulation of dust, fumes, vapors, or gases.
- C. Dust Control: Execute work by methods to minimize raising dust from construction operations. Provide positive means to prevent air-borne dust from dispersing into atmosphere and over adjacent property.
- D. Erosion and Sediment Control: Plan and execute work by methods to control surface drainage from cuts and fills, from borrow and waste disposal areas. Prevent erosion and sedimentation.
- E. Pest and Rodent Control: Provide methods, means, and facilities to prevent pests and insects from damaging the work.
- F. Pollution Control: Provide methods, means, and facilities to prevent contamination of soil, water, and atmosphere from discharge of noxious, toxic substances, and pollutants produced by construction operations. Comply with federal, state, and local regulations.

PART 2 PRODUCTS

2.01 PATCHING MATERIALS

- A. New Materials: As specified in product sections; match existing products and work for patching and extending work.
- B. Type and Quality of Existing Products: Determine by inspecting and testing products where necessary, referring to existing work as a standard.

PART 3 EXECUTION

3.01 LAYING OUT THE WORK

- A. Verify locations of survey control points prior to starting work.
- B. Promptly notify Construction Manager of any discrepancies discovered.
- C. Establish elevations, lines and levels. Locate and lay out by instrumentation and similar appropriate means:

3.02 GENERAL INSTALLATION REQUIREMENTS

- A. Install products as specified in individual sections, in accordance with manufacturer's instructions and recommendations, and so as to avoid waste due to necessity for replacement.
- B. Make vertical elements plumb and horizontal elements level, unless otherwise indicated.
- C. Install equipment and fittings plumb and level, neatly aligned with adjacent vertical and horizontal lines, unless otherwise indicated.
- D. Make consistent texture on surfaces, with seamless transitions, unless otherwise indicated.
- E. Make neat transitions between different surfaces, maintaining texture and appearance.

3.03 CUTTING AND PATCHING

- A. Whenever possible, execute the work by methods that avoid cutting or patching.
- B. Perform whatever cutting and patching is necessary to:
 - 1. Complete the work.
 - 2. Fit products together to integrate with other work.
 - 3. Provide openings for penetration of mechanical, electrical, and other services.

4. Match work that has been cut to adjacent work.
 5. Repair areas adjacent to cuts to required condition.
 6. Repair new work damaged by subsequent work.
 7. Remove samples of installed work for testing when requested.
 8. Remove and replace defective and non-conforming work.
- C. Execute work by methods that avoid damage to other work and that will provide appropriate surfaces to receive patching and finishing. In existing work, minimize damage and restore to original condition.
- D. Patching:
1. Finish patched surfaces to match finish that existed prior to patching. On continuous surfaces, refinish to nearest intersection or natural break. For an assembly, refinish entire unit.

3.04 PROGRESS CLEANING

- A. Maintain areas free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition.

3.05 PROTECTION OF INSTALLED WORK

- A. Protect installed work from damage by construction operations.
- B. Provide special protection where specified in individual specification sections.
- C. Remove protective coverings when no longer needed; reuse or recycle plastic coverings if possible.

3.06 FINAL CLEANING

- A. Use cleaning materials that are nonhazardous.
- B. Clean interior and exterior glass, surfaces exposed to view; remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces, vacuum carpeted and soft surfaces.
- C. Remove all labels that are not permanent. Do not paint or otherwise cover fire test labels or nameplates on mechanical and electrical equipment.
- D. Clean equipment and fixtures to a sanitary condition with cleaning materials appropriate to the surface and material being cleaned.

3.07 CLOSEOUT PROCEDURES

- A. Make submittals that are required by governing or other authorities.
- B. Review Section 01 7700 CLOSEOUT PROCEDURES AND SUBMITTALS.
- C. Notify Construction Manager when work is considered ready for Substantial Completion.
- D. Submit written certification that Contract Documents have been reviewed, work has been inspected, and that work is complete in accordance with Contract Documents and ready for Construction Manager's review.
- E. Notify Construction Manager when work is considered finally complete.
- F. Complete items of work determined by Construction Manager's final inspection.

END OF SECTION

SECTION 01 7419
CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

PART 1 GENERAL

1.01 WASTE MANAGEMENT REQUIREMENTS

- A. Owner requires that this project generate the least amount of trash and waste possible.
- B. Employ processes that ensure the generation of as little waste as possible due to error, poor planning, breakage, mishandling, contamination, or other factors.
- C. HRA Policy for this project is dependent on diversion of 50 percent, by weight, of potential landfill trash/waste by recycling and/or salvage.
- D. The following recycling incentive programs are mandatory for this project; Contractor is responsible for implementation:

1.02 SUBMITTALS

- A. ACTION SUBMITTALS
 - 1. CONSTRUCTION AND DEMOLITION WASTE MANAGEMENT(CWM) PLAN
 - a. Analysis of estimated job-site waste to be generated, including types and quantities of compostable, recyclable, and salvageable materials.
 - b. Description of means and methods to achieve 50 percent diversion requirement for compostable, recyclable, and salvageable materials, including those that may be donated to charitable organizations.
 - c. Identification of the carpet product's composition as polymer, nylon or polypropylene
 - d. Identification of recycling contractors and haulers proposed for use in the project and locations accepting construction waste materials or entities providing related services.
- B. FINAL WASTE MANAGMENT REPORT: General Contractor is responsible to submit at completion of construction and prior to contract close-out, in electronic format.
 - 1. All information required in Waste Management Progress Reports
 - 2. Legible copies of on-site logs, manifests, weight tickets, and receipts.
 - 3. Final calculations, including total amount (by weight or volume) of diverted construction and demolition waste, and the total amount (by weight or volume) of landfilled waste.

PART 3 EXECUTION

2.01 WASTE MANAGEMENT PLAN IMPLEMENTATION

- A. Manager: Designate an on-site person or persons responsible for instructing workers and overseeing and documenting results of the Waste Management Plan.
- B. Communication: Distribute copies of the Waste Management Plan to job site foreman, each subcontractor and Construction Manager.
- C. Facilities: Provide specific facilities for separation and storage of materials for recycling, salvage, reuse, return, and trash disposal, for use by all contractors and installers.
- D. Hazardous Wastes: Separate, store, and dispose of hazardous wastes according to applicable regulations.
- E. Recycling: Separate, store, protect, and handle at the site identified recyclable waste products in order to prevent contamination of materials and to maximize recyclability of identified materials. Arrange for timely pickups from the site or deliveries to recycling facility in order to prevent contamination of recyclable materials.
- F. Reuse of Materials On-Site: Set aside, sort, and protect separated products in preparation for reuse.
- G. Salvage: Set aside, sort, and protect products to be salvaged for reuse off-site.

2.02 UNACCEPTABLE METHODS OF WASTE DISPOSAL

- A. Burning or incinerating on or off project site
- B. Burying on project site, other than fill.
- C. Dumping or burying on other property, public or private, other than official landfill.
- D. Illegal dumping or burying.

END OF SECTION

SECTION 01 7700
CLOSEOUT PROCEDURES AND SUBMITTALS

PART 1 GENERAL

1.01 SUBMITTALS

- A. All documents required to create a complete Final Payment Application can be downloaded from <https://sites.google.com/site/nspconstructiondocs/>
- B. Notify Construction Manager when work is considered ready for Substantial Completion.
 - 1. Make sure the work is mostly complete and cleaned for inspection.
- C. Substantial Completion Submittals:
 - 1. Project Record Documents: Submit documents listed below to Construction Manager:
 - a. Final Pay Application
 - b. Monthly Employment Utilization (MEU) Form
 - c. Project Employment Utilization (PEU) for City Funded Projects
 - d. Lead-based Paint Hazard Clearance Testing
 - e. Energy Modeling/NEC Compliance Report
 - f. Final Waste Management Report, see Section 01 7419 CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL
 - g. Permit Closeout/Code Compliance
 - h. Winter Work/Weather Related Work Escrow
 - i. Final Lien Waivers
 - j. Material Allowance Reconciliation Change Order (if necessary).
- D. Notify Construction Manager when work is considered finally completed. All Punch List items shall be completed and approved by Construction Manager and HRA Project Manager.
- E. Final Completion Submittals:
 - 1. Project Record Documents: Submit documents listed below to Construction Manager:
 - a. Building Maintenance Manual and Warranty documents for following:
 - 1) Appliance and building systems
 - (a) HVAC equipment
 - (b) Lighting equipment
 - (c) Kitchen and Laundry Appliance Manuals
 - 2) Water-using equipment and controls installed:
 - (a) Hot water delivery system(s)
 - (b) Clothes washer
 - b. Signed Certificate of Substantial Completion
 - c. Punch List Items Completed

PART 3 EXECUTION

2.01 LEAD-BASED PAINT HAZARD CLEARANCE TESTING

- A. Refer to Section 02 8313 Lead Hazard Control Activities, Quality Assurance for clearance testing requirements.

2.02 ENERGY MODELING

- A. See Section SECTION 01 8113 Sustainable Design Requirements for energy conservation testing requirements.

2.03 OPERATION AND MAINTENANCE MANUALS

- A. Prepare instructions and data by personnel experienced in maintenance and operation of described products.
- B. Prepare data in the form of an instructional manual.

END OF SECTION

SECTION 01 8113
SUSTAINABLE DESIGN REQUIREMENTS

PART 1 GENERAL

1.01 ENERGY AND RESOURCE CONSERVATION

- A. This property is participating in Xcel Energy's Home Performance with Energy Star program.
 - 1. All insulation and HVAC work shall be performed by Xcel Energy's approved contractor list.
 - 2. General Contractors that are on the Home Performance list may choose Subcontractors that are not on the list, but those General Contractors will be responsible for all work completed.
 - 3. General Contractors will be responsible for submitting documentation required of the Home Performance with Energy Star program
- B. The "Residential Energy Specification" provided by the Neighborhood Energy Connection (NEC) (attached in appendix) is a part of the Scope of Work for this property. Contractor shall be responsible for achieving energy improvements outlined by the energy specification and shall coordinate relevant work with the NEC as follows:
 - 1. Refer to energy model that shows the building's projected energy performance, attached in appendix
 - 2. Coordinate with NEC which shall conduct a mid-construction pre-drywall thermal enclosure inspection
 - 3. Coordinate with NEC which shall verify the final performance of the building with performance testing
- C. Energy Efficient Lighting
 - 1. The Owner/Project Manager shall select specific locations of fixtures and switches in each area.
 - 2. All lighting fixtures will be purchased new, unless otherwise indicated.
 - 3. No plastic lighting fixtures are acceptable.
 - 4. No fluorescent tub light fixtures are acceptable in living spaces.
 - 5. Provide Energy Star certified CFL or LED light bulbs for all fixtures.
 - 6. All light fixtures are to have color corrected bulbs.
 - 7. Light bulbs that are viewable within fixtures will be a globe or candelabra style CFL.
 - 8. Provide and install lighting fixtures and switches.
 - 9. Review fixtures with Owner prior to installation.
 - 10. All electrical outlets and cover plates are to be replaced throughout the building.
- D. Energy Efficient Appliances
 - 1. All appliances must be purchased new and be Energy Star certified or high efficiency models when Energy Star certification is not possible.
 - 2. High-efficiency appliances meet the following standards:
 - a. Clothes washers must have a CEE Tier 2 or higher, a minimum Energy Factor of 2.0 or greater, and a water factor 6.0 or less.
 - b. Clothes Dryers must be a minimum 7.0 cubic feet capacity, have a sensor dry system, and have 5 Temperature Levels - High, Medium High, Medium, Low & Ultra Low
 - c. Dishwashers must be CEE Tier 2 or higher, with a minimum Energy Factor of 0.68 or greater, and a maximum annual energy use of 325 kilowatt-hours or less.
- E. New plumbing fixtures should be water conserving fixtures with a faucet flow rate of 2.0 GPM or less and a commode flush rate of 1.3 GPF or less.

PART 3 EXECUTION

3.01 CONSTRUCTION WASTE MANAGEMENT

- A. Comply with Construction Waste Management and Disposal Plan. Section 01 7419

3.02 CONSTRUCTION INDOOR-AIR-QUALITY MANAGEMENT

- A. Change all air filters regularly during construction with filters specified for the specific furnace. Replace all air filters immediately prior to Substantial Completion with the specified permanent filters.

END OF SECTION

SECTION 02 4100
DEMOLITION

PART 1 GENERAL

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1.01 LOCATIONS

- A. For complete locations refer to drawings.
- B. At yard, remove per drawings: existing garage and slab, existing vegetation indicated.
- C. At house exterior, remove per drawings: metal siding, metal trim & soffits, roofing and gutters, roof framing at gable end overhangs per drawings, miscellaneous wires and attachments, exterior doors, storm windows and doors, windows indicated
- D. At basement, remove per drawings: plumbing piping, furnace and hot water heater, laundry sink, appliances, damaged duct work, obsolete wiring, accessories, attachments.
- E. At first floor, remove per drawings: Kitchen cabinets, appliances, flooring in areas to receive new tile flooring, wood framing and walls to allow for new walls and new openings, ceiling finish in entire existing kitchen area, exterior wall finish in entire existing kitchen area, including west and south exterior walls, insulation in exterior walls that are opened, bathroom fixtures except tub (retain tile surround)
- F. All plumbing fixtures and piping
- G. At second floor, remove per drawings: carpet pad, door, window and base trim, except retain interior window casings at wood windows to remain, bathroom fixtures except tub (retain tile surround)
- H. Throughout house, clean and remove mold (contractor shall determine mold remediation method).

1.01 QUALITY ASSURANCE

- A. Demolition Firm Qualifications: Company specializing in the type of work required.

PART 3 EXECUTION

3.01 GENERAL PROCEDURES AND PROJECT CONDITIONS

- A. Comply with applicable codes and regulations for demolition operations and safety of adjacent structures and the public.
 - 1. Obtain required permits.
 - 2. Take precautions to prevent catastrophic or uncontrolled collapse of structures to be removed; do not allow worker or public access within range of potential collapse of unstable structures.
 - 3. Protect hardwood floors for possible refinishing later.
 - 4. Provide, erect, and maintain temporary barriers and security devices.
- B. If hazardous materials are discovered during removal operations, stop work and notify Construction Manager and Owner; hazardous materials include regulated asbestos containing materials, lead, PCB's, and mercury.
- C. Perform demolition in a manner that maximizes salvage and recycling of materials. Inform Project Manager of potential strategies to reuse construction material. Only move forward with reusing of construction materials with Project Manager's consent.

3.02 EXISTING UTILITIES

- A. Coordinate work with utility companies; notify before starting work and comply with their requirements
- B. Protect existing utilities to remain from damage.

3.03 SELECTIVE DEMOLITION FOR ALTERATIONS

- A. For asbestos abatement see Sections 02 8200

- B. Remove existing work as indicated on the drawings and as required to accomplish new work. Refer to drawings for detailed itemization and location of demolition work. Protect existing work to remain.

3.04 DEBRIS AND WASTE REMOVAL

- A. Remove all demolition debris and dispose of legally off site.
- B. See Section 01 7419 Construction Waste Management And Disposal

END OF SECTION

SECTION 02 8200
ASBESTOS REMEDIATION

PART 1 GENERAL

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1.01 LOCATIONS

- A. See hazardous materials survey for building components identified as containing asbestos. Contractor is responsible for abating all components identified in report.
- B. Asbestos at gray paper on basement joists
- C. Asbestos at gray paper on heat vents in kitchen
- D. Asbestos at gray paper on heat vents Bedroom #2 (second floor)
- E. Asbestos at brown caulking at electrical service entrance

1.02 DESCRIPTION OF WORK AND CONTRACTOR RESPONSIBILITIES

- A. Provide all labor, equipment, material supervision and subcontracting for the removal and disposal of all Asbestos-Containing Material (ACM) as specified in the attached Asbestos Test.
- B. Per Minnesota statute, Contractor shall provide a (5) day notification to the Minnesota Department of Health prior to beginning asbestos abatement activities, IF the abatement scope meets certain project criteria. See the MDH website for additional information:
<http://www.health.state.mn.us/divs/eh/asbestos/prof/notification.html>
- C. When work areas include both friable and nonfriable types of ACM, Contractor shall prepare work area using procedures for friable asbestos removal.

1.03 SUBMITTALS

- A. Proof that the Contractor is qualified to perform Asbestos Remediation in the State of Minnesota.
- B. Test Reports: Indicate Complete Remediation of Project.

END OF SECTION

SECTION 02 8313
LEAD HAZARD CONTROL ACTIVITIES

PART 1 GENERAL

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1.01 LOCATIONS

- A. See hazardous materials survey for building components identified as containing lead. Contractor is responsible for abating all components identified in report.
- B. Exterior
 - 1. White-painted wood window components throughout exterior (encapsulate, Section 09 9000)
 - 2. White-painted metal window and door trim throughout the exterior (demolish metal trim/wrap, Section 02 4100)
 - 3. White-painted wood doors throughout exterior (demolish doors, Section 02 4100)
- C. Front Porch
 - 1. White-painted wood walls on the porch (demolish siding inside porch, Section 02 4100)
- D. Garage
 - 1. White-painted wood service door and trim (demolish garage, Section 02 4100)
 - 2. White-painted wood window trim (demolish garage, Section 02 4100)
 - 3. White-painted wood overhead door and trim (demolish garage, Section 02 4100)
- E. Main Floor
 - 1. Brown-painted wood basement door identified in report is no longer in house

1.02 GENERAL INFORMATION

- A. Projects funded in whole or in part with federal funds must comply with the "Regulation on Lead-Based Paint Hazards in Federally Owned Housing and Housing Receiving Federal Assistance." As a component of Title X, Sections 1012 and 1013, rehabilitation projects receiving more than \$25,000 of federal funds must abate all lead.
- B. Properties built after 1/1/78 and properties needing emergency rehab assistance are exempt from Lead-Based Paint Regulations. of Title X, Sections 1012 and 1013

1.03 PRICE AND PAYMENT PROCEDURES

- A. Provide a price for the appropriate methods of abatement required by this scope of work.

1.04 SUBMITTALS

- A. Project Plan: prepare a written project plan and communicate it to the Construction Manager and Project Manager. Plan shall include:
 - 1. Start-up date and how long the project is expected to last.
 - 2. Areas to be abated and precautions to take.
 - 3. A warning to pay attention to the caution signs that are posted by the General Contractor around the project site.
 - 4. Location of areas that may be restricted.
- B. Test Reports: Indicate Lead Based Paint Clearance.
 - 1. Submitted at final draw

1.05 QUALITY ASSURANCE

- A. Licensed Lead Abatement Supervisor: Only General or Subcontractors who are State licensed to conduct lead hazard reduction work are allowed to bid on projects involving lead hazard reduction work. See Minnesota Statutes 144.9501-144.9512 and Minnesota Rules 4761.2000-4761.2700 for applicable safety precautions, disposal regulations, and other compliance regulations that apply to abatement activities.

- B. Per Minnesota statute, Contractor shall provide a (5) day notification to the Minnesota Department of Health prior to beginning lead abatement activities. During lead abatement, a MN Licensed Lead Abatement Supervisor shall be on site and workers conducting lead abatement shall be MN Licensed Lead Abatement Workers. See the MDH website for additional information:

<http://www.health.state.mn.us/divs/eh/lead/prof/notification.html>

C. Lead-Based Paint Hazard Clearance Testing

1. Where lead-based paint hazard control or reduction work has been performed by the General Contractor, the General Contractor will contact a certified third party Clearance Technician for clearance testing.
2. The Clearance Technician will conduct a visual assessment of completed work, take dust samples, have dust samples analyzed, and prepare a Clearance Report.
3. If sample results fail, Minnesota rules 4761.2670 subpart 2 and subpart 3 must be repeated. If test results of samples fail to meet clearance standards, surfaces must be retreated or recleaned at no additional cost to the Owner until clearance standard is met.
4. When the Clearance Report indicates that clearance standards have been met, and all other requirements of this section have been met, the Construction Manager and Owner will approve the final pay application.
5. Lead clearance testing is to be paid for by Contractor and included in the contract price.

PART 3 EXECUTION

2.01 ABATEMENT

- A. When the Risk Assessment process determines that a project contains a lead-based paint hazard, comply with the abatement measures defined by:
1. HUD in 24 CFR Part 35 Subpart A through R 35.1325 http://portal.hud.gov/hudportal/HUD?src=/program_offices/healthy_homes/enforcement/lshr
 2. EPA in 40 CFR 745.227(e). <http://www.gpo.gov/fdsys/pkg/CFR-2011-title40-vol31/pdf/CFR-2011-title40-vol31-sec745-227.pdf>
 3. Minnesota Statutes 144.9501-144.9512 and Minnesota Rules 4761.2000-4761.2700 <http://www.health.state.mn.us/divs/eh/lead/rule.html>
- B. Comply with the abatement methods listed below:
1. Component Replacement: The removal of building components that contain lead-based paint. It is most appropriate for items such as doors, windows, trim, and cabinets.
 2. Paint Removal: The separation of paint from the substrate using safe heat, chemical, or abrasive methods. It may be done on- or off-site. Abrasive methods can create a great deal of dust, are the most hazardous, and require the greatest care and most thorough clean-up.
 3. Enclosure: The installation of a barrier (such as gypsum board or paneling) that is mechanically attached to the building component, with all edges and seams sealed to prevent escape of lead-based paint dust. It is most appropriate for large surfaces, such as walls, ceilings, floors, and exteriors.
 4. Encapsulation: The application of a liquid or adhesive material that covers the component and forms a barrier that makes the lead-based paint surface inaccessible by relying upon adhesion. It may be appropriate for many kinds of smooth surfaces but it cannot be used effectively on friction surfaces, surfaces in poor condition, or surfaces that may become wet. It also must be compatible with existing paint.
 5. Soil Removal: The removal of at least the top six inches of topsoil is adequate for most projects. In areas with heavy contamination, up to two feet may have to be removed, and must be disposed of using proper waste management techniques that comply with local requirements. The maximum lead concentration in replacement soil shall not exceed 200 ug/g. Sod or seeding of new soil should occur.
 6. Soil Cultivation: The mixing of low lead soil with high lead soil is an appropriate method if the average lead concentration of the soil to be abated is below 1,500 ug/g. Thorough

mixing is required, and pilot testing of various techniques may be needed to ensure that thorough mixing does occur.

7. Paving: The covering of highly contaminated soil with high quality concrete or asphalt. Paving is common in high traffic areas but not appropriate in play areas. The need for uncontaminated replacement soil is eliminated as is waste disposal costs. Paving often turns out to be the most economical recourse, despite its aesthetic disadvantages.

SECTION 03 3000
CAST-IN-PLACE CONCRETE

PART 1 GENERAL

\$ _____

1.01 LOCATIONS

- A. Garage slab with thickened edge, 4" slab thickness, comply with IRC requirements

1.02 QUALITY ASSURANCE

- A. Perform work of this section in accordance with ACI 301 and ACI 318.

PART 2 PRODUCTS

2.01 FORMWORK

- A. Formwork Design and Construction: Comply with guidelines of ACI 347 to provide formwork that will produce concrete complying with tolerances of ACI 117.
- B. Form Materials: Contractor's choice of standard products with sufficient strength to withstand hydrostatic head without distortion in excess of permitted tolerances.
 - 1. Form Ties: Cone snap type that will leave no metal within 1-1/2 inches (38 mm) of concrete surface.

2.02 REINFORCEMENT

- A. Reinforcing Steel: ASTM A615/A615M Grade 40 (280).

2.03 CONCRETE MATERIALS

- A. Cement: ASTM C150, Type I - Normal Portland type.

2.04 CONCRETE MIX DESIGN

- A. Normal Weight Concrete:
 - 1. Compressive Strength, when tested in accordance with ASTM C39/C39M at 28 days: 3,000 psi (20.7 MPa).

PART 3 EXECUTION

3.01 PREPARATION

- A. Formwork: Comply with requirements of ACI 301. Design and fabricate forms to support all applied loads until concrete is cured, and for easy removal without damage to concrete.
- B. Where new concrete is to be bonded to previously placed concrete, prepare existing surface by cleaning with steel brush and applying bonding agent in accordance with manufacturer's instructions.

3.02 INSTALLING REINFORCEMENT AND OTHER EMBEDDED ITEMS

- A. Comply with requirements of ACI 301. Clean reinforcement of loose rust and mill scale, and accurately position, support, and secure in place to achieve not less than minimum concrete coverage required for protection.

3.03 PLACING CONCRETE

- A. Place concrete in accordance with ACI 304R.

3.04 FLOOR FLATNESS AND LEVELNESS TOLERANCES

- A. Maximum Variation of Surface Flatness:
 - 1. Exposed Concrete Floors: 1/4 inch (6 mm) in 10 ft (3 m).
- B. Correct the slab surface if tolerances are less than specified.
- C. Correct defects by grinding or by removal and replacement of the defective work. Areas requiring corrective work will be identified. Re-measure corrected areas by the same process.

3.05 CONCRETE FINISHING

- A. Repair surface defects, including tie holes, immediately after removing formwork.

- B. Concrete Slabs: Wood float finish to requirements of ACI 302.1R

3.06 CURING AND PROTECTION

- A. Comply with requirements of ACI 308R. Immediately after placement, protect concrete from premature drying, excessively hot or cold temperatures, and mechanical injury.

END OF SECTION

**SECTION 04 0100
MAINTENANCE OF MASONRY**

PART 1 GENERAL

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1.01 LOCATIONS

- A. Existing concrete block foundation walls, above grade exterior surfaces, to 6" below grade.
- B. Existing concrete block house foundation walls interior, all masonry visible and accessible in basement.
- C. Note: previous repair was made to extensive settling and deterioration of basement foundation at west side of house. The newer cast-in-place concrete wall on the interior of the basement corrected these problems. This scope does not include further repair of this foundation problem, but all foundation wall cracks and loose joints throughout the foundation interior and exterior shall be patched, repaired and/or repointed under this section.

1.02 FIELD CONDITIONS

- A. Cold and Hot Weather Requirements: Comply with requirements of ACI 530/530.1/ERTA or applicable building code, whichever is more stringent.

PART 3 EXECUTION

2.01 REBUILDING

- A. Cut out damaged and deteriorated masonry with care in a manner to prevent damage to any adjacent remaining materials.

2.02 REPOINTING

- A. Cut out loose or disintegrated mortar in joints to minimum 1/2 inch (6 mm) depth or until sound mortar is reached.
- B. Pre-moisten joint and apply mortar. Pack tightly in maximum 1/4 inch (6 mm) layers. Form a smooth, compact concave joint to match existing.

2.03 CLEANING NEW MASONRY

- A. Verify mortar is fully set and cured.
- B. Clean surfaces and remove large particles with wood scrapers, brass or nylon wire brushes.

END OF SECTION

**SECTION 04 2300
GLASS UNIT MASONRY**

PART 1 GENERAL

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1.01 LOCATIONS

- A. Basement, (1) existing window opening
- B. First floor bathroom, replace existing window with glass block

1.02 FIELD CONDITIONS

- A. Cold and Hot Weather Requirements: Comply with requirements of ACI 530/530.1/ERTA or applicable building code, whichever is more stringent.

PART 2 PRODUCTS

2.01 GLASS UNITS

- A. Hollow Glass Units: Permanently seal hollow unit by heat fusing joint; with joint key to assist mortar bond.

2.02 MORTAR MIXING

- A. Thoroughly mix mortar ingredients in accordance with ASTM C270 in quantities needed for immediate use.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Erect glass units and accessories in accordance with manufacturer's instructions.

END OF SECTION

SECTION 06 1000
ROUGH CARPENTRY

PART 1 GENERAL

\$ _____

1.01 LOCATIONS

- A. For complete locations refer to drawings.
- B. New garage framing, see site plan for location and see 2.05 below
- C. Rebuild roof overhangs at north and south main gable ends. New 2x4 lookouts attached with metal hangers, new 2x4 subfascia. Extend new sheathing back one rafter space
- D. New furring and leveling strips at exterior over the stucco, to prep for siding installation, as required in order to produce a continuous and even finished result
- E. Basement
 - 1. New basement stair guard rail complying with IRC requirements
- F. First floor
 - 1. New walls and openings indicated on drawings
 - 2. Infill window opening indicated
 - 3. Resize window opening at new kitchen sink
 - 4. New window opening in laundry
- G. Second floor
 - 1. Widen bathroom door opening
- H. Front porch
 - 1. Install new decking at existing floor joists.

PART 2 PRODUCTS

2.01 DIMENSION LUMBER FOR CONCEALED APPLICATIONS

- A. Sizes: Nominal sizes as indicated on drawings, S4S.
- B. Moisture Content: S-dry or MC19.
- C. Stud Framing (2 by 2 through 2 by 6)
 - 1. Grade: No. 2
- D. Joist, Rafter, and Small Beam Framing (2 by 6 through 4 by 16)
 - 1. Grade: No. 2
- E. Miscellaneous Framing, Blocking, Nailers, Grounds, and Furring:
 - 1. Grade: No. 2
 - 2. Boards: Standard or No. 3.

2.03 ACCESSORIES

- A. Fasteners and Anchors:
 - 1. Metal and Finish: Hot-dipped galvanized steel per ASTM A153/A153M for high humidity and preservative-treated wood locations, unfinished steel elsewhere.
- B. Joist Hangers: Hot dipped galvanized steel, sized to suit framing conditions. Provide hangers manufactured by Simpson or equal.
 - 1. For contact with preservative treated wood in exposed locations, provide minimum G185 (Z550) galvanizing per ASTM A653/A653M.
- C. Building Paper: Water-resistant asphalt saturated building paper.

2.04 FACTORY WOOD TREATMENT

- A. Treated Lumber and Plywood: Comply with requirements of AWP A U1 - Use Category System for wood treatments determined by use categories, expected service conditions, and specific applications.
 - 1. Preservative-Treated Wood: Provide lumber and plywood marked or stamped by an ALSC-accredited testing agency, certifying level and type of treatment in accordance with AWP A standards.

2.05 GARAGE

- A. New garage to be 22'x22' two-car garage with 16'x7' garage door opening. 6/12 gable roof with manufactured roof trusses with 16" overhangs. Siding and trim to match new siding and trim at house. One window and one service door, see window and door schedules.
- B. For overhead door see Section 08 3323; siding and trim specified in Section 07 4620
- C. See Section 03 3000 Cast-in-Place Concrete for garage slab.

2.06 FRONT PORCH DECKING

- A. 1x6 composite decking, UltraDeck Fusion Decking, "Driftwood" color, available from Menards, or equal

PART 3 EXECUTION

3.01 INSTALLATION - GENERAL

- A. Select material sizes to minimize waste.

3.02 FRAMING INSTALLATION

- A. Set structural members level, plumb, and true to line. Discard pieces with defects that would lower required strength or result in unacceptable appearance of exposed members.
- B. Install structural members full length without splices unless otherwise specifically detailed.
- C. Comply with member sizes, spacing, and configurations indicated, and fastener size and spacing indicated, but not less than required by applicable codes and AFPA Wood Frame Construction Manual.
- D. Install horizontal spanning members with crown edge up and not less than 1-1/2 inches (38 mm) of bearing at each end.

END OF SECTION

SECTION 06 2000
FINISH CARPENTRY

PART 1 GENERAL

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1.01 LOCATIONS

- A. For complete locations refer to drawings.
- B. House exterior per drawings
 - 1. Front porch trim: at openings, apply 5/4 Miratec to jambs and head (siding butts to); painted metal coping at sill at openings.
 - 2. Window and door casings, SmartSide manufactured trim products, applied over existing original casings so that new casings are in plane with the siding, which will be installed on furring over the existing stucco. Ensure a snug fit to the original casings where the joint is visible and apply sealant as needed.
 - 3. Cornerboards, fascias, soffits, SmartSide manufactured trim and soffit products
 - 4. Replicate the configuration of the existing metal siding, fascias and soffits, boxing around the existing original features of the house
- C. Garage exterior
 - 1. Garage corner boards, window and door trim, fascias and soffit, SmartSide manufactured trim products
- D. First floor interior
 - 1. At remodeled kitchen, new casing at windows and doors, 4/4 x 4" flat, except retain, patch and/or replicate existing casing at window pair at kitchen bench
 - 2. New baseboard throughout remodeled areas, 4/4 x 4" flat
 - 3. New wall corner board at bench, extending to ceiling, see interior elevation drawing
 - 4. Reinstall and refit doors for living and dining room built-ins (doors are stored in basement)
 - 5. Repair and reinstall door casings at front door after new door and frame are installed
 - 6. At Bedroom #3 patch baseboard at remodeled openings
 - 7. Continuous handrail at stair to second floor, comply with IRC
 - 8. Continuous handrail at stair to basement, comply with IRC
- E. Second floor interior
 - 1. New casing at all windows and doors, 2 1/4" ranch, except at window trim to remain
 - 2. New baseboard throughout, 2 1/4" ranch
 - 3. Handrail at stair from first floor
 - 4. 2 1/4" ranch casing around attic scuttle
- F. Miscellaneous adjustments and repairs throughout the house called out on the drawings shall be included in this section line item.

1.02 RELATED SECTIONS

- A. Section 09 9000 Painting and Coating, for trim finish and color.
- B. Section 07 4620 Fiber Substrate Siding

PART 2 PRODUCTS

2.01 FINISH CARPENTRY ITEMS

- A. Quality Grade: Unless otherwise indicated provide products of quality specified by AWI/AWMAC/WI

Architectural Woodwork Standards for Premium Grade.

2.02 LUMBER MATERIALS

- A. Composite trim at garage and house exterior: Smartside exterior trim, or equal. Smooth (not wood grain) appearance.
- B. New interior trim where indicated, pine species, clear grain, paint finish

PART 3 EXECUTION

3.01 CARPENTRY STANDARDS

- A. Set and secure materials and components in place, plumb and level.
- B. Use finish nails of sufficient length to penetrate framing 1".
- C. Mitre all lap joints, and break all lap joints over framing.
- D. Carefully scribe work abutting other components, with maximum gaps of 1/32 inch (1 mm). Do not use additional overlay trim to conceal larger gaps.

3.02 COMPOSITE TRIM

- A. Composite lumber products: install according to manufacturer's instructions. Miratec boards installed smooth side out.

END OF SECTION

**SECTION 07 2113
RIGID FOAM INSULATION**

PART 1 GENERAL

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1.01 LOCATION

- A. Attic access hatch door shall be insulated to R-44

1.02 Comply with NEC Energy Specifications

PART 2 PRODUCTS

2.01 MATERIALS

- A. Rigid Foam Insulation
 - 1. Extruded Poly Styrene (XPS)

PART 3 EXECUTION

3.01 APPLICATION

- A. Apply insulation in accordance with manufacturer's instructions.

END OF SECTION

SECTION 07 2119
FOAMED-IN-PLACE INSULATION

PART 1 GENERAL

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1.01 LOCATIONS

- A. Exterior house walls
 - 1. Where exterior wall finishes are removed (intention of demolition drawings is that opening of exterior walls is to be minimized)
- B. Basement rim joist per NEC energy specification, except not at west wall at existing insulated wall
- C. At west exterior wall where wood frame cantilevers beyond the line of the foundation wall, due to foundation damage, insulate exposed joist spaces (see drawings)

1.02 Comply with NEC ENERGY SPECIFICATIONS

PART 2 PRODUCTS

2.01 MATERIALS

- A. Foamed-In-Place Insulation: Medium-density, rigid or semi-rigid, closed cell polyurethane foam; foamed on-site, using blowing agent of water or non-ozone-depleting gas.
 - 1. Closed Cell Content: At least 90 percent.

2.02 ACCESSORIES

PART 3 EXECUTION

3.01 APPLICATION

- A. Apply insulation in accordance with manufacturer's instructions.

END OF SECTION

**SECTION 07 2126
BLOWN INSULATION**

PART 1 GENERAL

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1.01 LOCATIONS

- A. Attic

1.02 NEC ENERGY SPECIFICATION

- A. Comply with NEC energy specification.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Loose Fill Insulation: ASTM C739, cellulose fiber type, nodulated for pour and bulk for pneumatic placement.
 - 1. R-Value: Attic R-50

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install insulation and ventilation baffle in accordance with ASTM C1015 and manufacturer's instructions.
- B. Place insulation pneumatically to completely fill stud, joist, and rafter spaces.
- C. Pour insulation to completely fill stud, joist, and rafter spaces to a density of 3.5 lbs per cubic foot per cavity.
- D. Completely fill intended spaces. Leave no gaps or voids.

END OF SECTION

**SECTION 07 2500
WEATHER BARRIERS**

PART 1 GENERAL

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1.01 LOCATION

- A. Garage

PART 2 PRODUCTS

2.01 WEATHER BARRIER ASSEMBLIES

- A. Weather Barrier Membrane: Spunbonded polyolefin, non-woven, non-perforated, weather barrier
 - 1. Manufacturer: DuPont Tyvek HomeWrap or like product to be approved by Owner.
- B. Seam Tape: DuPont Tyvek or like product
- C. Flashing: DuPont Tyvek or like product
- D. Fasteners: DuPont Tyvek or like product

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install weather barrier over exterior face of exterior wall substrate in accordance with manufacturer's recommendations.
- B. Attach weather barrier to studs through exterior sheathing. Secure using weather barrier manufacturers recommended fasteners, spaced 12-18 inches vertically on center along stud line, and 24 inches on center, maximum horizontally.

END OF SECTION

SECTION 07 2700
AIR BARRIER SYSTEM

PART 1 GENERAL

\$ _____

1.01 Comply with NEC ENERGY SPECIFICATIONS, including insulate rim joist

PART 2 PRODUCTS

2.01 ADHESIVES AND SEALANTS

- A. Comply with VOC requirements in Section 01 6116

PART 3 EXECUTION

3.01 INSTALLATION

- A. Seal attic bypasses. Weatherstrip attic access hatch. Refer to NEC energy specification.
- B. Mechanical work: Seal penetrations from unconditioned spaces with joint sealant and provide flashing. Seal flue openings with flashing and fire-rated joint sealant
- C. Pest Management Measures
 - 1. For openings in the building envelope less than 1/4 inch, including pipe and electrical penetrations, completely seal to avoid pest entry.
 - 2. Install rodent-and corrosion proof screens for openings greater than 1/4 inch

END OF SECTION

SECTION 07 3113
ASPHALT SHINGLES

PART 1 GENERAL

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1.01 LOCATIONS

- A. Reroof entire house roof including lower roofs
- B. Roof entire new garage roof

1.03 QUALITY ASSURANCE

- A. Perform Work in accordance with the recommendations of NRCA Steep Roofing Manual.

PART 2 PRODUCTS

2.01 SHINGLES

- A. Asphalt Shingles: Asphalt-coated glass felt, mineral granule surfaced, complying with ASTM D3462; Class A fire resistance.
 - 1. Self-sealing type.
 - 2. Manufacturer: GAF ELK, Timberline 30 Year HD shingles
 - 3. Style: Architectural Shingle.
 - 4. Color: Weathered Wood

2.02 ACCESSORIES

- A. Nails: Standard round wire shingle type, of hot-dipped zinc coated steel, 12 gage, 0.105 inch (2.67 mm) shank diameter, 3/8 inch (9.5 mm) head diameter, of sufficient length to penetrate through roof sheathing or 3/4 inch (19 mm) into roof sheathing or decking.

PART 3 EXECUTION

3.01 INSTALLATION - SHINGLES

- A. Install shingles in accordance with manufacturer's instructions.

END OF SECTION

SECTION 07 4620
FIBER SUBSTRATE SIDING

PART 1 GENERAL

\$ _____

1.01 LOCATIONS

- A. Entire house exterior. Install over existing stucco after existing metal siding has been removed. Reuse existing furring strips or install new furring. Replicate the configuration of the existing metal siding, fascias and soffits, boxing around the existing original features of the house
- B. Front porch exterior and interior walls
- C. Garage

1.02 SECTION INCLUDES

- A. Primed hardboard siding.
- B. Matching soffit panels and trim.
- C. Sealing panel joints and penetrations.
- D. Building paper.
- E. Flashings within siding installation.

1.03 REFERENCES

- A. ANSI/AHA A135.6 - Hardboard Siding.

1.04 SUBMITTALS

- A. Manufacturer's data sheets on each product to be used, including:
 - 1. Preparation instructions and recommendations.
 - 2. Storage and handling requirements and recommendations.
 - 3. Installation methods, including nailing patterns.
 - 4. Applicable model code authority evaluation report (including but not limited to ICBO, SBCCI, BOCA, CCMC).
- B. Siding manufacturer's requirements for products to be installed by others.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Store products off the ground, on a flat surface, and under a roof or separate waterproof covering.

1.06 WARRANTY

- A. Manufacturer's Standard Warranty: 50 year transferable limited warranty with 5 year 100 percent repair and replacement warranty.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Acceptable Manufacturer: LP SmartSide, which is located at: 414 Union St. Suite 2000 ; Nashville, TN 37219; Toll Free Tel: 888-820-0325; Email: request info (marketing.center@lpcorp.com); Web: www.lpcorp.com/smartside
- B. Requests for substitutions will be considered in accordance with provisions of Section 01 6000.

2.02 MATERIALS

- A. Lap Siding: "Foundations" Series as manufactured by LP SmartSide
 - 1. Style: Smooth surface; 7 7/8 inches wide; square edges.
 - 2. Length: 16 feet
- B. Soffit Panels: As manufactured by LP SmartSide.

1. Description: Embossed surface hardboard complying with ANSI/AHA A135.6, with resin and linseed oil impregnated surface; thermoset acrylic latex primed finish; no grooves, square edges.
 2. Style: Smooth grain
- C. Trim and Fascia: As manufactured by LP SmartSide.
1. Style: Smooth grain

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install in accordance with manufacturer's instructions and drawing details.
 1. Read warranty and comply with terms necessary to maintain warranty coverage.
 2. Install in accordance with conditions stated in model code evaluation service report.
 3. Properly space joints to allow for equilibration.
- B. Allow products to adjust to ambient conditions before starting installation.
- C. Do not install to green wood or crooked structural framing. Do not install over rain soaked or buckled materials. Do not install if excessive moisture is present in the interior, including that from curing concrete and plaster.
- D. Over Wood and Wood-Composite Sheathing: Fasten siding through sheathing into studs.
- E. Install sheet metal flashing above door and window casings and horizontal trim in field of siding.
- F. Do not install siding less than 6 inches (150 mm) from ground nor closer than 1 inch (25 mm) to roofs, patios, porches, and other surfaces where water may collect.
- G. Do not cut siding to fabricate trim; use trim components manufactured for the purpose.
- H. After installation, seal joints except lap joints of lap siding. Seal around penetrations. Paint exposed cut edges

3.02 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products after Substantial Completion.

END OF SECTION

SECTION 07 6200
SHEET METAL FLASHING AND TRIM

PART 1 GENERAL

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1.01 LOCATION

- A. Reroofing of house roof, repair or replace existing roof flashings as required
- B. Where low roofs meet house wall, repair and/or replace flashings as needed
- C. Where new front porch roof meets house wall
- D. Front porch: sheet metal copings at sills at openings, extend metal 4" up flanking walls

1.02 QUALITY ASSURANCE

- A. Perform work in accordance with SMACNA Architectural Sheet Metal Manual requirements and standard details, except as otherwise indicated.

PART 2 PRODUCTS

2.01 SHEET MATERIALS

- A. Aluminum: ASTM B209 (ASTM B209M); 0.032 inch (0.8 mm) thick; anodized finish of color as selected.
 - 1. Clear Anodized Finish: AAMA 611 AA-M12C22A41 Class I clear anodic coating not less than 0.7 mils (0.018 mm) thick.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Secure flashings in place using concealed fasteners. Use exposed fasteners only where permitted.
- B. Seal metal joints watertight.

END OF SECTION

SECTION 07 7123
MANUFACTURED GUTTERS AND DOWNSPOUTS

PART 1 GENERAL

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1.01 LOCATIONS

- A. Main roof, install new gutters at existing locations.
- B. Locate downspouts and tie to drainage system according to Landscape Plan

1.02 DESIGN REQUIREMENTS

- A. Conform to applicable code for size and method of rain water discharge.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Pre-Finished Aluminum Sheet: ASTM B209 (ASTM B209M); 0.032 inch (0.8 mm) thick.
 - 1. Finish: Plain, shop pre-coated with modified silicone coating.
 - 2. Color: To match the exterior trim.

2.02 COMPONENTS

- A. Gutters: K style profile, seamless, one-piece aluminum gutter and guard, 4" except 5" where upper roof empties into lower roof gutter
- B. Gutter Guard: seamless, one-piece aluminum gutter and guard
- C. Downspouts: SMACNA Rectangular profile.
 - 1. Size: 3X5
- D. Anchors and Supports: Profiled to suit gutters and downspouts.
 - 1. Gutter Supports: Brackets.
 - 2. Downspout Supports: Straps.
- E. Fasteners: Galvanized steel , with soft neoprene washers.

2.03 ACCESSORIES

- A. Splash Blocks: Precast concrete type, size and profiles indicated; minimum 3000 psi (21 MPa) at 28 days, with minimum 5 percent air entrainment.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install gutters, downspouts, and accessories in accordance with manufacturer's instructions.
- B. Where feasible, a minimum of 6' offset extension shall be installed at the ends of all downspouts to divert water away from foundation.
- C. Downspouts shall divert the entire water load in the direction of the rain garden according to the Landscape Plan.

3.02 LOCATION

- A. Install new gutters at all existing gutter locations, and as noted on drawings
- B. Locate downspouts according to Landscape Plan
- C. Install splash blocks at all downspouts

END OF SECTION

SECTION 08 0150
RESTORATION AND MAINTENANCE OF WINDOWS

PART 1 GENERAL

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1.01 LOCATIONS

- A. All existing wood windows except where replaced by new windows

1.02 RELATED SECTIONS

- A. Section 02 8313 Lead Hazard Control Activities
- B. Section 09 9000 Painting and Coating
- C. Section 08 5169 Metal Storm Windows

PART 2 PRODUCTS

2.01 WINDOW ACCESSORIES

- A. Vinyl jamb liner for double hung window, color: white
- B. Metal weather-stripping
- C. Sash locks

PART 3 EXECUTION

3.01 WINDOW RESTORATION

- A. Objective is to restore existing windows to fully functioning condition and air-seal to extent possible
- B. Dismantling existing double-hung windows
 - 1. Carefully remove stops, parting bead and sashes
 - 2. Remove sash cord and sash weights
- C. Lead Hazard Control Activities
 - 1. See Section 02 8313, encapsulate lead paint surfaces
- D. Air-sealing
 - 1. Remove window weights and air-seal weight pocket and around window frame using window foam and caulk. Prevent foam and caulk from contacting interior window finished surfaces
- E. Jamb-liners
 - 1. Install jamb liners at both sides of window frame following manufacturer's installation instructions
- F. Weather-stripping
 - 1. Install weather-stripping at meeting rail of upper and lower sash.
- G. Reinstallation
 - 1. Reinstall window sashes and stops
 - 2. Check that no gap exists between sash and jamb-liner. Remove sash if necessary in order to adjust.
 - 3. Install sash locks at second floor windows
- H. Painting and coating
 - 1. See Section 09 9000 for finishing requirements

SECTION 08 1429
WOOD DOORS

PART 1 GENERAL

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1.01 LOCATIONS

- A. New interior doors per door schedule on drawings.

1.02 SECTION INCLUDES

- A. Wood doors, stile and rail design.
- B. Frames for pre-hung doors.
- C. Hardware for interior doors.

PART 2 PRODUCTS

2.01 INTERIOR WOOD DOORS

- A. Quality Level: Premium Grade, in accordance with AWI/AWMAC/WI Architectural Woodwork Standards.
- B. Wood products that Emit Low or No Formaldehyde
- C. Wood products that Emit Low or No VOC
- D. First floor interior doors: 1-3/8" thick
 - 1. Wood surface: Natural finish oak, match existing dark stained finish at living room
 - 2. Door Type: Two-panel solid and hollow core per door schedule on drawings
- E. Second floor interior doors: 1-3/8" thick
 - 1. Wood surface: paint-grade maple or birch, primed and painted
 - 2. Door Type: flush

2.02 HARDWARE

- A. Interior hardware to be Schlage Andover latchset with knob and Andover Rosette, Satin Nickel
- B. See door schedule for hardware designation for new doors
- C. Submit manufacturer's data before ordering.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install doors in accordance with manufacturer's instructions and AWI/AWMAC Quality Standards requirements.
- B. Trim door width by cutting equally on both jamb edges.
- C. Trim door height by cutting bottom edges to a maximum of 3/4 inch (19 mm).
- D. Machine cut for hardware.
- E. Coordinate installation of doors with installation of frames and hardware.

3.02 TOLERANCES

- A. Conform to specified quality standard for fit, clearance, and joinery tolerances.

END OF SECTION

SECTION 08 1613
FIBERGLASS DOORS

PART 1 GENERAL

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1.01 LOCATIONS

- A. Front entry door, see schedule on drawings
- B. Side entry door, see schedule on drawings
- C. Garage service door, see schedule on drawings

1.02 SECTION INCLUDES

- A. Fiberglass Entrance Doors

1.03 REFERENCES

- A. American Architectural Manufacturer Association (AAMA)
 - 1. AAMA 1304; Voluntary Specification for Forced Entry Resistance of Side-Hinged Door Systems.
- B. ASTM International
 - 1. ASTM E283; Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen
 - 2. ASTM E330; Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Pressure Difference
 - 3. ASTM E331; Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference
 - 4. ASTM E547; Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Cyclic Static Air Pressure Difference

1.04 SUBMITTALS

- A. Refer to Section 01 0010
- B. Product Data: Submit door manufacturer's current product literature, including installation instructions.

1.05 WARRANTY

- A. Manufacturer standard warranty indicating that doors will be free from material and workmanship defects from the date of substantial completion for the time periods indicated below:
 - 1. Door System: 25 Years.

PART 2 - PRODUCTS

2.01 MANUFACTURER

- A. JELD-WEN Fiberglass Doors; 3305 Lakeport Blvd.; Klamath Falls, OR 97601, USA; Phone 877.535.3462, fax 541.882.3455; website www.jeld-wen.com; or equal
- B. Basis of Design: Doors are based on the JELD-WEN's Smooth Pro Fiberglass.
 - 1. Smooth-Pro, Design SP-40 (4-panel)

2.02 MATERIALS

- A. Stiles and Rails: Engineered wood (laminated veneer lumber), composite capped.

2.03 FIBERGLASS ENTRANCE DOORS

- A. Thickness: 1-3/4 inch
- B. Door Style: Solid
- C. Door Shape: Squared Top
- D. Finish: Paint surface in field, see selection sheet for color

- E. Entry hardware
 - 1. At front door: Schlage Camelot Avanti entry lockset
 - 2. At side door and garage service door: Schlage Camelot entry lever and keyed deadbolt

2.04 PREHUNG HARDWOOD SYSTEMS

- A. Profile: Single Door
- B. Jamb: Solid pine wood.
- C. Width: Custom as required for existing opening
- D. Casing: none (field case)
- E. Hinges: Solid brass concealed-bearing.
 - 1. Size: 4 by 4 square.
 - 2. Finish:
 - 3. Sills: Aluminum

2.05 FABRICATION

- A. Skins are adhered to engineered wood frames with core materials and bonding agents that permanently lock skin to frame.

2.06 DELIVERY, STORAGE AND HANDLING

- A. Deliver doors, materials and components in manufacturer's original, unopened, undamaged containers with identification labels intact.
- B. Store doors as recommended by manufacturer.

PART 3 - EXECUTION

3.01 GENERAL

- A. Install doors in accordance with manufacturer's installation guidelines and recommendations.

3.02 EXAMINATION

- A. Inspect door prior to installation.
- B. Inspect rough opening for compliance with door manufacturer recommendations. Verify rough opening conditions are within recommended tolerances.

3.03 INSTALLATION

- A. Install jamb assembly.
 - 1. Caulk sill along outside edge and ½ inch in from edge of subfloor.
 - 2. Set door unit into center of opening and tack in place.
 - 3. Shim hinge then latch side jambs straight. Inspect jamb for square, level and plumb.
 - 4. Shim and fasten top of unit where sidelight joins door jamb.
 - 5. Fasten hinge side jamb to studs.
 - 6. Verify door opens freely and weatherstrip meets door evenly.
 - 7. Verify door sweep contacts threshold evenly.
 - 8. Fasten latch side jamb to studs.
- B. Caulk outside perimeter of door unit between brickmold and wall face, along front side of threshold, and between jamb sides and threshold.

3.04 PROTECTION

- A. Protect installed doors from damage.

END OF SECTION

SECTION 08 3323
RESIDENTIAL OVERHEAD DOORS

PART 1 GENERAL

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1.01 LOCATION

- A. New garage

1.02 REFERENCES

- B. ANSI/DASMA 108 Standard Method for Testing Sectional Garage Doors and Rolling Doors: Determination of Structural Performance Under Uniform Static Air Pressure Difference
- C. UL: Underwriters Laboratories, Inc.

1.03 DESIGN / PERFORMANCE REQUIREMENTS

- A. Single-Source Responsibility: Provide doors, tracks, motors, and accessories from one manufacturer for each type of door. Provide secondary components from source acceptable to manufacturer of primary components.

1.04 SUBMITTALS

- A. Product Data: Manufacturer's data sheets on each product to be used, including:
 - 1. Preparation instructions and recommendations.
 - 2. Storage and handling requirements and recommendations.
 - 3. Installation methods.
- B. Selection Samples: For each finish product specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns.

1.05 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with minimum five years documented experience.
- B. Installer Qualifications: Authorized representative of the manufacturer with minimum five years documented experience.
- C. Products Requiring Electrical Connection: Listed and classified by Underwriters Laboratories, Inc. acceptable to authority having jurisdiction as suitable for purpose specified.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Store products in manufacturer's unopened labeled packaging until ready for installation.
- B. Protect materials from exposure to moisture until ready for installation.
- C. Store materials in a dry, ventilated weathertight location.
- D. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

1.07 WARRANTY

- A. Warranty: 15 years

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Acceptable Manufacturer: Overhead Door Corp or equal, requests for substitutions will be considered in accordance with provisions of Section 01 6000.

2.02 RESIDENTIAL METAL OVERHEAD DOORS

- A. Non-Insulated Steel Sectional Overhead Doors: Traditional Steel Collection 170 Series Non-Insulated Steel Doors by Overhead Door Corporation.

1. Door Assembly: High tensile strength steel construction.
2. Size: 16' x 7'.
3. Panel Thickness: 2 inches nominal.
4. Exterior Steel: Residential grade high strength hot-dipped galvanized steel 26 gauge
5. Window Design: no windows
6. Finish/Color: Two coat baked-on polyester. Color: match House Color No. 2 (trim), submit color options to Construction Manager
7. Hardware: Standard garage door hardware.
8. Bottom fixture - DASMA 103 tamper resistant fasteners.
9. Weatherstripping: Extruded PVC bulb-type strip at bottom.
10. Track: Provide track as recommended by manufacturer to suit loading required and clearances available.
11. Nylon rollers.
12. Electric Opener

PART 3 EXECUTION

3.01 PREPARATION

- A. Clean surfaces thoroughly prior to installation.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.02 INSTALLATION

- A. Install overhead doors, track and openers in accordance with approved shop drawings and the manufacturer's printed instructions.
- B. Coordinate installation with adjacent work to ensure proper clearances and allow for maintenance.
- C. Anchor assembly to wall construction and building framing without distortion or stress.
- D. Securely brace door tracks suspended from structure. Secure tracks to structural members only.
- E. Fit and align door assembly including hardware.

3.03 CLEANING AND ADJUSTING

- A. Adjust door assembly to smooth operation and in full contact with weatherstripping.
- B. Clean doors, frames and glass.
- C. Remove temporary labels and visible markings.

3.04 PROTECTION

- A. Do not permit construction traffic through overhead door openings after adjustment and cleaning.
- B. Protect installed products until completion of project.
- C. Touch-up, damaged coatings and finishes and repair minor damage before Substantial Completion.

END OF SECTION

SECTION 08 5169
METAL STORM WINDOWS

PART 1 GENERAL

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1.01 LOCATIONS

- A. Provide combination storm windows at all existing first and second floor windows except where new windows are indicated and at leaded glass window at north elevation as indicated on the drawings

1.02 SECTION INCLUDES

- A. Aluminum Combination Screen/Storm Windows

1.03 REFERENCE STANDARDS

- A. AAMA/WDMA/CSA 101/I.S.2/A440 - Voluntary Specifications for Aluminum, Vinyl (PVC) and Wood Windows and Glass Doors; American Architectural Manufacturers Association; 2008.

PART 2 PRODUCTS

2.01 SYSTEM DESCRIPTION

- A. Two track double hung, with easily removable sashes and half screens; clear glass; pocketed head, jamb and sill; interlocking top and bottom sash; operating window sash locks; butt-joint corners and tubular frame design, metal screen fabric, double wool pile weatherstripping.
- B. Finish
 - 1. Prefinished color: White

2.02 MANUFACTURERS

- A. Larson Manufacturing Company; Product, Larson Gold Series: www.lasondoors.com

PART 3 EXECUTION

3.01 PREPARATION

- A. Remove existing storm window frames entirely. Clean out and prepare existing window frame to receive new storm window.

3.02 INSTALLATION

- A. General: Install per manufacturers written instructions.
- B. Set frame in continuous bead of silicone sealant. Set frame plumb, level, and true to line, without warp or rack of frames and panels. Fasten to window frame with long screws.

3.03 ADJUSTING

- A. Adjust operating panels, screens, and hardware for a tight fit at contact points and weatherstripping for smooth operation and weathertight closure.
- B. Reinstall or replace windows whose parts cannot be removed and reinstalled easily and that do not operate smoothly.

3.04 CLEANING

- A. Clean Up: Clean units and glass after installation. Remove and dispose of debris from installation.

END OF SECTION

SECTION 08 5313
VINYL WINDOWS

PART 1 GENERAL

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1.01 LOCATIONS

- A. New windows per drawings and window schedule

1.01 PERFORMANCE REQUIREMENTS

- A. Performance Requirements: U-Value not to exceed .35

PART 2 PRODUCTS

2.01 COMPONENTS

- A. Windows: Extruded, hollow, tubular, ultra-violet resistant polyvinyl chloride (PVC) with integral color; factory fabricated; with vision glass, related flashings, anchorage and attachment devices.
 - 1. Performance Requirements: AAMA/WDMA/CSA 101/I.S.2/A440 R15.
 - 2. Configuration: casement (approved for egress at new bedroom windows)
 - 3. Color: White
- B. Insect Screens: 14/18 mesh, steel strands.
- C. Fasteners: Stainless steel.

2.02 ADHESIVES AND SEALANTS

- A. VOC content not to exceed the following [g/L; less water and less exempt compounds]:
 - 1. Multipurpose Construction Adhesives: 70 g/L
 - 2. Structural Glazing Adhesives: 100 g/L

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install window units in accordance with manufacturers instructions.
- B. Attach window frame and shims to perimeter opening to accommodate construction tolerances and other irregularities.
- C. Align window plumb and level, free of warp or twist. Maintain dimensional tolerances and alignment with adjacent work.
- D. Insulate any voids between the window frame and the rough opening with foam insulation.

3.02 ADJUSTING

- A. Adjust hardware for smooth operation and secure weathertight closure.

3.03 APPLICATIONS

- A. Water Management: Walls, Exterior Windows
 - 1. Provide weather-resistive barrier/housewrap
 - 2. Provide pathway for liquid water to exit exterior wall assembly
 - 3. Provide pan flashing, side flashing, and head flashing

END OF SECTION

SECTION 09 0120
REPAIR OF PLASTER AND GYPSUM BOARD SURFACES

PART 1 GENERAL

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1.01 LOCATIONS

- A. Throughout; as needed following improvements at all new work
- B. Throughout, where repair and patching is needed at existing conditions

1.02 SUMMARY

- A. This section covers surface repairs of plaster and gypsum board surfaces. Existing house finishes are veneer plaster over gypsum board.
- B. Finish surface type should match existing surfaces
- C. All repair work to be even and seamless and match adjacent surfaces.

PART 2 PRODUCTS

2.01 ACCESSORIES

- A. Galvanized metal lath
- B. Joint Compound
- C. Plaster
- D. Plastic Tarps

PART 3 EXECUTION

3.01 REPAIR

- A. Walls and Ceilings: Repair interior surface(s) so that finish surface is even and properly prepared for finish application.
 - 1. Protect adjacent finished surfaces by covering with plastic or tarps.
 - 2. Install galvanized metal lath over area of back up as required. May also secure with screws and insert piece of gypsum board in areas to be patched.
 - 3. Before applying scratch coats, dampen areas to reduce absorption from joint compound/plaster.
 - 4. Apply finish coat and bring to thickness flush with surrounding surface.
 - 5. The interior temperature must be no less than a minimum 60 degrees during this work.

END OF SECTION

SECTION 09 0160
HARDWOOD FLOORING RESTORATION

PART 1 GENERAL

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1.01 LOCATIONS

- A. Existing floors at living room and dining room

1.01 RELATED SECTIONS

- B. See Section 01 6116 Volatile Organic Compound Content Restrictions

PART 2 PRODUCTS

PART 3 EXECUTION

3.01 RESTORATION

- A. Remove paint from stair treads and risers to the second floor as per section 02 813.
- B. Restore hardwood floors: Counter sink all nails and fill holes. Remove the quarter round molding and protect the wall molding with painters tape. Drum sand and edge floor finishing with 120 grit sandpaper to completely remove the existing finish. Vacuum and wipe floor with slightly water dampened rag, until no dust is present.
- C. Stain flooring to match existing wood trim and built-ins.
- D. Apply a coat of Minwax Low-VOC Water Based Polyurethane base coat followed by 3 coats of Minwax Low-VOC Water Based polyurethane for floors.
 - 1. Product may not exceed 250 grams of VOC per Liter

END OF SECTION

SECTION 09 2116
GYPSUM BOARD INSTALLATION

PART 1 GENERAL

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1.01 LOCATIONS

- A. New gypsum board finishes at remodeled spaces on the first floor
- E. For patching and repair, see Section 09 0120 Repair of Plaster and Gypsum Board Surfaces

PART 2 PRODUCTS

2.01 GYPSUM BOARD ASSEMBLIES

- A. Provide completed assemblies complying with ASTM C840 and GA-216.

2.02 BOARD MATERIALS

- A. Gypsum Wallboard: Paper-faced gypsum panels as defined in ASTM C1396/C1396M; sizes to minimize joints in place; ends square cut.
 - 1. Application: Use for vertical surfaces and ceilings, unless otherwise indicated.
 - 2. Thickness:
 - a. Vertical Surfaces: 1/2 inch
 - b. Ceilings: 5/8 inch

2.03 ACCESSORIES

- A. Joint Materials: ASTM C475 and as recommended by gypsum board manufacturer for project conditions.
 - 1. Tape: 2 inch (50 mm) wide, creased paper tape for joints and corners, except as otherwise indicated.
 - 2. Ready-mixed vinyl-based joint compound.
 - 3. Powder-type vinyl-based joint compound.
 - 4. Chemical hardening type compound.

PART 3 EXECUTION

3.01 BOARD INSTALLATION

- A. Comply with ASTM C840, GA-216, and manufacturer's instructions. Install to minimize butt end joints, especially in highly visible locations.
- B. Single-Layer Non-Rated: Install gypsum board in most economical direction, with ends and edges occurring over firm bearing.

3.02 JOINT TREATMENT

- A. Finish gypsum board in accordance with levels defined in ASTM C840, as follows:
 - 1. Level 4: Walls and ceilings to receive paint finish or wall coverings

END OF SECTION

SECTION 09 3000

TILING

PART 1 GENERAL

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1.01 LOCATIONS

- A. Tile flooring at kitchen, laundry/pantry, first floor bathroom
- B. Tile flooring at side door landing and steps (treads and risers) from landing to first floor
- C. Tile flooring at second floor bathroom
- D. Existing tile surrounds at both bathrooms to remain, no work

1.02 FIELD CONDITIONS

- A. Do not install adhesives in an unventilated environment.
- B. Maintain ambient and substrate temperature of 50 degrees F (10 degrees C) during installation of mortar materials.

PART 2 PRODUCTS

2.01 TILE

- A. Floor tile, see selection sheet

2.03 GROUT MATERIALS

- A. Standard Grout: Any type specified in ANSI A118.6 or A118.7.

PART 3 EXECUTION

3.01 INSTALLATION - GENERAL

- A. Install tile in accordance with applicable requirements of ANSI A108.1 through A108.13, manufacturer's instructions, and The Tile Council of North America Handbook recommendations.
- B. Caulk all inside corners in lieu of grout.

**SECTION 09 6219
LAMINATE FLOORING**

PART 1 - GENERAL

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1.01 LOCATIONS

- A. Patch existing laminate flooring at new hallway, Bedroom #3 and walk-in closet as required

PART 2 – PRODUCTS

2.01 SALVAGE

- A. Salvage and reuse existing laminate flooring from areas where flooring is to be removed in kitchen.

PART 3 – EXECUTION

- A. Install laminate flooring plumb, level, square, and free from warp or twist while maintaining dimensional tolerances and alignment with surrounding construction.
- B. Roll flooring immediately after installation with minimum 100 pounds roller.
- C. Install flooring wall to wall before installation of floor-set cabinets, casework, furniture, equipment, movable partitions, etc. Extend flooring into toe spaces, door recesses, closets, and similar openings.
- D. Scribe, cut, and fit to permanent fixtures, columns, walls, partitions, pipes, outlets, and built-in furniture and cabinets leaving required expansion of 1/4 inch to 1/2 inch.

SECTION 09 6800

CARPETING

PART 1 GENERAL

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1.01 LOCATIONS

- A. Second floor: Bedrooms #1 and #2, stair landing, stairs down to first floor
- C. See materials and selection sheet

1.02 FIELD CONDITIONS

- A. Maintain minimum 70 degrees F (21 degrees C) ambient temperature 24 hours prior to, during and 24 hours after installation.
- B. Ventilate installation area during installation and for 72 hours after installation.

PART 2 PRODUCTS

2.01 CARPET

- A. Carpet Type Shaw Anso Yarn Texture Serenity Garden: Tufted, nylon, conforming to the following criteria:
 - 1. FHA Approved
 - 2. VOC Content: Provide CRI Green Label Plus certified product ; in lieu of labeling, independent test report showing compliance is acceptable.

2.02 CUSHION

- A. Cushion: Cellular rubber:
 - 1. VOC Content: Provide CRI Green Label Plus certified product ; in lieu of labeling, independent test report showing compliance is acceptable.

2.03 ACCESSORIES

- A. Tackless Strip: Carpet gripper, of type recommended by carpet manufacturer to suit application, with attachment devices.
- B. Adhesives - General: Compatible with materials being adhered; maximum VOC content of 50 g/L; CRI Green Label certified ; in lieu of labeled product, independent test report showing compliance is acceptable.
- C. Seam Adhesive: Recommended by manufacturer.

PART 3 EXECUTION

3.01 INSTALLATION - GENERAL

- A. Lay out carpet and locate seams in accordance with shop drawings:
 - 1. Locate seams in area of least traffic, out of areas of pivoting traffic, and parallel to main traffic.
 - 2. Align run of pile in same direction as anticipated traffic and in same direction on adjacent pieces.

3.02 STRETCHED-IN CARPET

- A. Install tackless strips with pins facing the wall around entire perimeter, except across door openings. Use edge strip where carpet terminates at other floor coverings.
- B. Double cut carpet seams , with accurate pattern match. Make cuts straight, true, and unfrayed. Apply seam adhesive to all cut edges immediately.
- C. Join seams by hand sewing. Form seams straight, not overlapped or peaked, and free of gaps.
- D. Following seaming, hook carpet onto tackless strip at one edge, power stretch, and hook firmly at other edges. Follow manufacturer's recommendations for method and amount of stretch.
- E. The carpet should be stretched to eliminate puckers, scallops and ripples.

END OF SECTION

SECTION 09 9000
PAINTING AND COATING

PART 1 GENERAL

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1.01 LOCATIONS

- A. Lead abatement, encapsulate:
 - 1. Exterior wood window components per lead report
- B. Exterior, paint per selection sheet
 - 2. House siding and trim
 - 3. Fiberglass entrance doors, frame and casing, exterior and interior
 - 4. Garage exterior, see selection sheet
- C. Interior, paint per selection sheet
 - 1. First floor ceilings, walls, doors, window jambs and casings, door casings, base trim (except see natural finish doors per schedule and item #D for refinishing woodwork in Living and Dining)
 - 2. Stairs to basement, walls, ceiling and stair treads and risers
 - 3. Stairway to second floor, walls and ceiling
 - 4. Second floor ceilings, walls, doors, window jambs and casings, door casings, base trim
- D. Interior, refinish existing natural finish woodwork in Living and Dining areas
 - 1. Baseboard, window and door casings, picture rail
 - 2. Built-in cabinetry, including existing doors to be refitted
 - 3. Strip existing finishes where required; patch existing surfaces and restain as required; apply one new coat of polyurethane

1.02 DELIVERY, STORAGE AND HANDLING

- A. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.
- B. Paint Materials: Store at minimum ambient temperature of 45 degrees F (7 degrees C) and a maximum of 90 degrees F (32 degrees C), in ventilated area, and as required by manufacturer's instructions.

1.03 FIELD CONDITIONS

- A. Do not apply materials when surface and ambient temperatures are outside the temperature ranges required by the paint product manufacturer.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Paints and Coatings: Sherwin Williams Low VOC or any manufacturer listed in MPI Approved Products List (at www.paintinfo.com) approved by Project Manager.
- B. Provide all paint and coating products used in any individual system from the same manufacturer; no exceptions.
- C. See material and color selections
- D. Stains: Minwax Low VOC or any other manufacturer approved by Project Manager

2.02 VOC REQUIREMENTS

- A. See requirements in Section 01 6116 Volatile Organic Compound (VOC) Content Restrictions

2.03 PAINT SYSTEMS

- B. Primer coat at bare wood surfaces and new drywall surfaces, primer manufacturer to be same as paint

manufacturer.

- C. Provide Premium Grade systems (2 top coats) as defined in MPI Architectural Painting Specification Manual, except as otherwise indicated.
- D. Where a specified paint system does not have a Premium Grade, provide Custom Grade system.
- E. Where sheen is not specified or more than one sheen is specified, sheen will be selected later by Construction Manager from the manufacturer's full line.
- F. Refer to Materials and Colors Selection Sheet for color and sheen
- G. Provide smooth texture throughout.

PART 3 EXECUTION

3.01 SCOPE -- SURFACES TO BE FINISHED

- A. At locations indicated, paint all exposed surfaces except where indicated not to be painted or to remain natural; the term "exposed" includes areas visible through permanent and built-in fixtures when they are in place.
- B. Paint the surfaces as follows:
 - 1. If a surface, material, or item is not specifically mentioned, paint in the same manner as similar surfaces, materials, or items, regardless of whether colors are indicated or not.
 - 2. Paint surfaces behind movable equipment and furnishings the same as similar exposed surfaces.
 - 3. Paint surfaces to be concealed behind permanently installed fixtures, equipment, and furnishings, using primer only, prior to installation of the permanent item.
 - 4. Paint back sides of access panels and removable and hinged covers to match exposed surfaces.
 - 5. Paint surfaces impacted by new work, paint entire wall when patching work performed.
- C. Do not paint or finish the following items:
 - 1. Items fully factory-finished unless specifically noted; factory-primed items are not considered factory-finished.
 - 2. Items indicated to receive other finish.
 - 3. Items indicated to remain naturally finished.
 - 4. Fire rating labels, equipment serial number and capacity labels, and operating parts of equipment.

3.02 APPLICATION

- A. Apply products in accordance with manufacturer's instructions and as specified or recommended by MPI Manual, using the preparation, products, sheens, textures, and colors as indicated.
- B. Do not apply finishes over dirt, rust, scale, grease, moisture, scuffed surfaces, or other conditions detrimental to formation of a durable coating film; do not apply finishes to surfaces that are not dry.
- C. Use applicators and methods best suited for substrate and type of material being applied and according to manufacturer's instructions.
- D. Minimum Coating Thickness: Apply paint materials no thinner than manufacturer's recommended spreading rate; provide total dry film thickness of entire system as recommended by manufacturer.
- E. Apply finish to completely cover surfaces with uniform appearance without brush marks, runs, sags, laps, ropiness, holidays, spotting, cloudiness, or other surface imperfections.

END OF SECTION

SECTION 09 9723
CONCRETE AND MASONRY COATINGS

PART 1 GENERAL

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1.01 LOCATIONS

- A. Basement floor, throughout
- B. Interior of basement foundation walls, throughout, DryLock by ULG, or like product

PART 2 PRODUCTS

2.01 MATERIALS

- A. Coatings - General: Provide complete systems formulated and recommended by manufacturer for the applications indicated, in the thicknesses indicated.

PART 3 EXECUTION

3.01 CLEANING

- A. Prior to coating, hand wash all surfaces

3.01 PRIMING

- A. Apply primer to all surfaces, unless specifically not required by coating manufacturer. Apply in accordance with coating manufacturer's instructions.

3.02 COATING APPLICATION

- A. Apply coatings in accordance with manufacturer's instructions, to thicknesses specified.
- B. Apply in uniform thickness coats, without runs, drips, pinholes, brush marks, or variations in color, texture, or finish. Finish edges, crevices, corners, and other changes in dimension with full coating thickness.

END OF SECTION

SECTION 10 5623
CLOSET STORAGE SHELVING

PART 1 GENERAL

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1.01 LOCATIONS

- A. Closet rods and shelving at closets on first and second floors
- B. (6) 12" deep open shelves at pantry east wall

1.02 SECTION INCLUDES

- A. Wall mounted wire closet shelving.
- B. Accessories.

PART 2 PRODUCTS

2.01 SHELVING APPLICATIONS

- A. Shelf Depth: 12 inches, unless otherwise indicated.
- B. Coat Closet:
 - 1. Wall-to-wall shelf with integral hanger rod.

2.02 MATERIALS

- A. Wire Shelving: Factory-assembled coated wire mesh shelf assemblies for wall-mounting, with all components and connections required to produce a rigid structure that is free of buckling and warping.
 - 1. Construction: Cold-drawn steel wire with average tensile strength of 100,000 psi (690 MPa) resistance welded into uniform mesh units, square, rigid, flat, and free of dents or other distortions, with wires trimmed smooth.
 - 2. Coating: PVC or epoxy, applied after fabrication, covering all surfaces.
 - 3. PVC Coating: 9 to 11 mils thick.
 - 4. Epoxy Coating: Non-toxic epoxy-polyester powder coating baked-on finish, 3 to 5 mils thick.
 - 5. Standard Mesh Shelves: Cross deck wires spaced at 1 inch (25.4 mm).
 - 6. Close-Mesh Shelves: Cross deck wires spaced at 1/2 inch (12.7 mm).
 - 7. Shelf and Rod Units: Integral hanging rod at front edge of shelf.
 - 8. Free-Sliding Hanging Rod: Integral hanging rod that permits uninterrupted sliding of
 - 9. hangers the full width of the shelf.
- B. Mounting Hardware: Provide manufacturer's standard mounting hardware; include support braces, wall brackets, back clips, end clips, poles, and other accessories as required for complete and secure installation; factory finished to match shelving.
- C. Fasteners: As recommended by manufacturer for mounting substrates.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install in accordance with manufacturer's instructions, with shelf surfaces level.
- B. Cap exposed ends of cut wires.
- C. Install back clips, end clips at side walls, and support braces at open ends. Install intermediate
- D. Support braces as recommended by manufacturer.
- E. Mounting Heights: confirm with Construction Manager prior to installation

END OF SECTION

**SECTION 11 3100
RESIDENTIAL APPLIANCES**

PART 1 GENERAL

\$ _____

1.01 LOCATIONS

- A. At kitchen, provide and install:
 - 1. Range
 - 3. Microwave vent hood
 - 4. Dishwasher
 - 5. Refrigerator
- B. At first floor laundry, provide:
 - 1. Washer
 - 2. Dryer
- C. Ducting
 - 1. Provide code-compliant ducting for vent hood to exterior of home
 - 2. Provide code-compliant ducting for dryer to exterior of home
- D. Comply with appliance specifications in NEC energy specification

1.03 QUALITY ASSURANCE

- A. Electric Appliances: Listed and labeled by UL and complying with NEMA standards.
- B. Gas Appliances: Bearing design certification seal of AGA.

PART 2 PRODUCTS

2.01 RESIDENTIAL APPLIANCES All are manufactured by Frigidaire, white finish

Refrigerator	Frigidaire FFHT2126LW
Range	Frigidaire FFGF3023LW
Microwave hood	Frigidaire FFMV162LW
Dishwasher	Frigidaire FGHD2465NW
Washer	Frigidaire FAFW3801LW
Dryer	Frigidaire FAQG7001LW

PART 3 EXECUTION

3.01 INSTALLATION

- A. All appliances shall be uncrated, cleaned, installed and readied for use.
- B. Installation shall include all cord attachments, wiring, plumbing, and natural gas supply piping necessary for appliance operation.
- C. Install in accordance with manufacturer's instructions.
- D. Anchor built-in equipment in place.

END OF SECTION

SECTION 12 1110
HRA MAIL BOX AND HOUSE NUMBERS

PART 1 GENERAL

\$ _____

1.01 LOCATIONS

- A. One set of house numbers and mailbox at front entrance, location as directed by Construction Manager
- B. One set of house numbers at garage, above door facing alley

PART 2 PRODUCTS

2.01 Mailbox

- A. Gibraltar Mailboxes, Designer Lockable Wall Mount Mailbox or similar, submit for approval by Construction Manager.

2.02 Address Numbers

- A. 2 sets of (3), black, flush mount, metal

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install in accordance with manufacturer's instructions.

END OF SECTION

**SECTION 12 1111
BATHROOM FURNISHINGS**

PART 1 GENERAL

\$ _____

1.01 LOCATIONS

- A. Provide all new bathroom accessories at each bathroom, including 2 towel bars, toilet paper holder and shower curtain rod.

PART 2 PRODUCTS

2.01 TOWEL BARS

- A. Install a metal bath set comprised of two 24" towel bars and toilet paper holder
- B. See selection sheet for manufacturer and model

2.02 SHOWER CURTAIN ROD

- A. Install a shower curtain rod using wall anchors.
- B. See selection sheet for manufacturer and model

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install accessories according to manufacturers' written instructions, using fasteners appropriate to substrate indicated and recommended by unit manufacturer. Install units level, plumb, and firmly anchored in locations and at heights indicated.

END OF SECTION

**SECTION 12 3530
RESIDENTIAL CASEWORK**

PART 1 GENERAL

\$ _____

1.01 LOCATIONS

- A. All new kitchen cabinets and countertops per drawings
- B. New bathroom vanity at each bathroom

1.02 SUBMITTALS

- A. Shop Drawings: Indicate casework locations, large scale plans, elevations, clearances required, rough-in and anchor placement dimensions and tolerances, and color sample.

1.03 QUALITY ASSURANCE

- A. Products: Complying with KCMA A161.1 and KCMA Certified.

PART 2 PRODUCTS

2.01 MANUFACTURER

- A. The HRA has approved Shrock Select, Medallion or Mid-Continent

2.02 COMPONENTS

- A. Cabinets per 1.01 above, per drawings and selection sheet
- B. Cabinet Construction: Plywood sides and bases.
- C. Door and Drawer Fronts: Solid wood.
- D. Drawer Box Construction: Plywood with dovetail joinery
- E. Kitchen countertop: plastic laminate over particle board, integral back splash, per drawings and selection sheet

2.03 HARDWARE

- A. Hardware: see Materials and Selection Sheet

2.04 FABRICATION

- A. Shop assembles casework for delivery to site in units easily handled and to permit passage through building openings.
- B. Fabricate corners and joints without gaps or inaccessible spaces or areas where dirt or moisture could accumulate.

2.05 FINISHES

- A. Exposed To View Surfaces: Stain, seal, and varnish - see Materials and Selection Sheet

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install casework, components and accessories in accordance with manufacturer's instructions.
- B. Set casework items plumb and square, securely anchored to building structure.

END OF SECTION

**SECTION 22 3000
PLUMBING EQUIPMENT**

PART 1 GENERAL

\$ _____

1.01 LOCATIONS

- A. Remove existing water heater in basement and replace with new side-vented water heater, per NEC energy specification.
- B. Provide new vent opening through the existing basement wall and patch around opening as required to seal wall
- C. Upgrade of water meter. Contact: Northern Water Works (888) 497-4171. There is no cost to the contractor for purchase or installation of water meter. Include contractor's labor cost to coordinate Northern Water Works to install the meter.

1.02 SUBMITTALS

- A. Manufacturer's product data

PART 2 PRODUCTS

2.01 RESIDENTIAL WATER HEATER

- A. New 40 gallon water heater complying with NEC energy specification.

PART 3 EXECUTION

3.01 WATER HEATER INSTALLATION

- A. Install equipment in accordance with manufacturer's instructions, as required by code, and complying with conditions of certification, if any. Provide all required piping, equipment and accessories.
- B. Hot water heater shall be installed by a contractor whose principal occupation is the sale and installation of plumbing, heating, and/or air conditioning equipment and shall be installed in compliance with all applicable codes.
- C. Provide new gas piping from shut-off valve to fixture.
- D. Provide water piping with backflow prevention.
- E. Provide side vent with power vent.
- F. Provide electrical outlet.
- G. Discharge tube shall be directed to the drain.
- H. Recycle the existing HWH.

END OF SECTION

SECTION 22 4000
PLUMBING FIXTURES AND PIPING

PART 1 GENERAL

\$ _____

1.01 LOCATIONS

- A. At basement, provide and install:
 - 1. Utility sink with washing machine hookup
- B. At kitchen, provide and install:
 - 1. New sink and faucet
- C. At two bathrooms, provide and install:
 - 1. Toilet
 - 2. Lav (integral vanity countertop)
 - 3. Lav faucet
 - 4. New tub and shower controls (tub and tub drain to remain at both bathrooms)
- D. All new supply and waste piping throughout house. Connect waste lines to existing cast iron drain at basement slab.
- E. Backflow preventer at exterior hose bib.
- F. Gas piping for appliances and new furnace.

PART 2 PRODUCTS

2.01 PRODUCTS

- A. Refer to selection sheet for fixture selections

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install new fixtures with trap, easily removable for servicing and cleaning.
- B. Install new PVC or ABS waste and vent piping
- C. Install flexible PEX piping with a minimum number of couplings to new fixtures. Install mechanical connectors and shut off valves for each fixture.
- D. Six pipe to 1990 CABO minimums per table 2406.5
- E. Include clothes washer hook up.
- F. Furnish and install all water piping and shut-off valves necessary to complete work.
- G. Seal around plumbing penetrations in all exterior surfaces, surfaces that border on unconditioned spaces, between floors, and throughout the exterior of the building.
- H. Clean out basement floor drain at end of construction period and verify operation and function. Install new drain cover.

END OF SECTION

SECTION 23 0000
RESIDENTIAL VENTILATION

PART 1 GENERAL

\$ _____

- 1.01** A. Refer to NEC energy specification

PART 2 PRODUCTS

2.01 BATHROOM VENT FAN/LIGHT FIXTURE:

- A. All vent fans shall be energy star rated ceiling mounted fan/light fixtures rated for a minimum 100 watt exterior ducted vent fan capable of a minimum of 80 CFM
- B. Product: NuTone QTREN080FLT or like product to be approved by the Project Manager
- C. Switch: Light and fan shall use same switch with a time delay for fan such as the EFI/Light Time Delay Switch Part # 5100.505 or equipped with a humidistat sensor.
- D. Ducting: Install 4" metal duct and vent to the exterior ideally through a gable end using a 4" hooded vent with damper.
 - 1. All duct seams shall be sealed with duct mastic. Insulate duct work with vinyl or foil faced R-6 minimum duct insulation.
 - 2. Repair any damage to the ceiling installation or air seal fan/light assembly to the ceiling with low VOC caulk.

2.02 DUCT ASSEMBLIES

- A. Low Pressure Supply (Heating Systems): 1/2 inch w.g. (125 Pa) pressure class, galvanized steel.
- B. Low Pressure Supply (System with Cooling Coils): 1/2 inch w.g. (125 Pa) pressure class, galvanized steel.
- C. General Exhaust: 1/2 inch w.g. (125 Pa) pressure class, galvanized steel.
- D. Kitchen Cooking Hood Exhaust: 1/2 inch w.g. (125 Pa) pressure class, galvanized steel.

2.03 DUCTWORK FABRICATION

- A. Fabricate and support in accordance with SMACNA HVAC Duct Construction Standards - Metal and Flexible, and as indicated.
- B. Provide duct material, gages, reinforcing, and sealing for operating pressures indicated.
- C. Increase duct sizes gradually, not exceeding 15 degrees divergence wherever possible; maximum 30 degrees divergence upstream of equipment and 45 degrees convergence downstream.
- D. Fabricate continuously welded round and oval duct fittings in accordance with SMACNA HVAC Duct Construction Standards - Metal and Flexible.

2.04 KITCHEN HOOD EXHAUST DUCTWORK

- A. Fabricate in accordance with SMACNA HVAC Duct Construction Standards - Metal and Flexible, SMACNA Kitchen Ventilation Systems and Food Service Equipment Fabrication & Installation Guidelines and NFPA 96.

END OF SECTION

SECTION 23 5400
FORCED AIR FURNACE AND DUCTS

PART 1 GENERAL

\$ _____

1.01 LOCATIONS

- A. Comply with NEC energy specification
- B. New furnace per NEC energy specification
- C. Repair and/or replace supply and return ducting as required
- D. Replace missing duct registers, including large floor register at living room floor

1.02 SUBMITTALS

- A. Product Data: Provide rated capacities, weights, accessories, electrical nameplate data, and wiring diagrams.
- B. Product data indicating Heating, Cooling equipment and Ducts are in compliance with Air Conditioning Contractors of America (ACCA) Manuals, Parts J, S, and D. Alternate Compliance paths are as Follows:
 - 1. ASHRAE Handbooks

PART 2 PRODUCTS

2.01 GAS FIRED FURNACES

- A. See NEC specification
- B. Units: Self-contained, packaged, factory assembled, pre-wired unit consisting of cabinet, supply fan, heating element, controls, air filter, humidifier, and accessories; wired for single power connection with control transformer.
 - 1. Safety certified by CSA in accordance with ANSI Z 21.47.
 - 2. Venting System: Direct.
 - 3. Combustion: Sealed
 - 4. Air Flow Configuration: Upflow.
 - 5. Heating: Natural gas fired.
- C. Performance:
 - 1. HVAC contractor will be responsible to determine heat load using Manual J.
- D. Cabinet: Steel with baked enamel finish, easily removed and secured access doors with safety interlock switches, glass fiber insulation with reflective liner.
- E. Primary Heat Exchanger:
 - 1. Material: Hot-rolled steel
 - 2. Shape: Tubular type.
- F. Secondary Heat Exchanger:
 - 1. Material: Aluminized steel.
 - 2. Coating: Polypropylene.
- G. Gas Burner:
 - 1. Atmospheric type with adjustable combustion air supply,
 - 2. Gas valve, two stage provides 100 percent safety gas shut-off; 24 volt combining pressure regulation, safety pilot, manual set (On-Off), pilot filtration, automatic electric valve.
 - 3. Electronic pilot ignition, with electric spark igniter.
- H. Supply Fan: Centrifugal type rubber mounted with direct drive with adjustable variable pitch motor pulley.
- I. Motor: Refer to Section 22 0513; 1750 rpm two-speed, permanently lubricated, hinge mounted.
- J. Air Filters: 1 inch (25 mm) thick glass fiber, disposable type arranged for easy replacement.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install in accordance with NFPA 90A.
- B. Install gas fired furnaces in accordance with NFPA 54.
- C. Provide vent connections in accordance with NFPA 211.
- D. The Contractor shall have all HVAC ducting cleaned by a professional duct cleaning company after all interior repairs are completed.

END OF SECTION

SECTION 23 6213
FORCED AIR A/C

PART 1 GENERAL

\$ _____

1.01 LOCATIONS

- A. New air-conditioning equipment for forced air system, per NEC energy specification

1.02 SUBMITTALS

- A. Product Data: Provide rated capacities, weights specialties and accessories, electrical nameplate data, and wiring diagrams. Include equipment served by condensing units in submittal, or submit at same time, to ensure capacities are complementary.
- B. Design Data: Indicate pipe and equipment sizing.

PART 2 PRODUCTS

2.01 MANUFACTURED UNITS

- A. Units: Self-contained, packaged, factory assembled and pre-wired units suitable for outdoor use consisting of cabinet, compressors, condensing coil and fans, integral sub-cooling coil, controls, liquid receiver, wind deflector, and screens.

2.02 CASING

- A. House components in welded steel frame with galvanized steel panels with weather resistant, baked enamel finish.

2.03 CONDENSER COILS

- A. Coils: Aluminum fins mechanically bonded to seamless copper tubing. Provide sub-cooling circuits. Air test under water to 425 psig (2900 kPa), and vacuum dehydrate. Seal with holding charge of nitrogen.

2.04 FANS AND MOTORS

- A. Weatherproof motors suitable for outdoor use, single phase permanent split capacitor or 3 phase, with permanent lubricated ball bearings and built in current and thermal overload protection.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Provide piping for refrigeration system as required.
- B. Provide connection to refrigeration piping system and evaporators. Refer to Section 23 2300. Comply with ASHRAE Std 15.
- C. Provide concrete pad for mounting outside condenser unit.

END OF SECTION

SECTION 26 0001
POWER, WIRING AND DEVICES

PART 1 GENERAL

\$ _____

1.01 LOCATIONS

- A. Entire house shall comply with St. Paul Bulletin 80-1
- B. Remove all obsolete low voltage wiring and devices throughout house
- C. At kitchen and laundry, provide all new concealed wiring, receptacles and switches.
- D. Replace all existing smoke and CO detectors and provide hard wired smoke and CO detectors to meet code.
- E. All new receptacle and switch devices and cover plates throughout the house.
- F. Electrical service and wiring for new water heater, furnace, exhaust fans and kitchen and laundry appliances.
- G. (2) all new weatherproof outlets, near front door and at rear of house
- H. Underground power supply to garage, for lighting and garage door opener.
- I. All new exhaust fans in bathrooms per NEC energy specification
- J. Install one location of each at first floor: cable, phone, network Cat5
- K. Index all circuits at existing panel
- L. New wall switches where new lighting is indicated

1.02 SUMMARY OF BULLETIN 80-1 (Property Maintenance Code)

- A. All hazardous, improper and/or illegal wiring shall be removed or required to comply with the present Electrical Code. This will include other buildings on the property such as garages, sheds, etc.
- B. Minimum size for all new services for single residential occupancies shall be 100 ampere, 240 Volt.
- C. No additions or extensions will be allowed on an existing ampere services.
- D. The Following are minimum requirements for new service installation:
 - 1. **Electrical outlets required:** Every habitable room 120 square feet or less in area, of a dwelling or dwelling unit of a multiple dwelling shall contain at least two separate and remote duplex outlets. Additional outlets shall be required for each additional 80 square feet or fraction thereof. Most new outlets must be Arc-Fault Circuit Interrupters (AFCI) protected according to Section 210.12 of the 2008 National Electrical Code.
 - 2. **In Kitchens:** Three separate and remote duplex outlets shall be required. At least one of the required duplex outlets shall be supplied by a separate twenty ampere circuit. Any receptacle installed above the counter top shall be of the Ground Fault Circuit Interrupter (GFCI) type, replace outlets that do not meet GFCI requirements.
 - 3. **Every public hall, water closet compartment, bathroom, laundry room and furnace room must contain at least one electric light fixture.** In addition to the light fixture, every bathroom and laundry room must have at least one duplex outlet. The required duplex outlet in each laundry room must be on a separate twenty ampere circuit. The required duplex outlet in each bathroom must be of the (GFCI) type. Any existing outlets in any bathroom must be converted to a GFCI-protected outlet or removed. The required GFCI outlet in the bathroom must be immediately adjacent to the sink. If a bathroom is added or gutted as part of the update, a 20 ampere circuit will be required per NEC 210.11(C)(3).
 - 4. **Every common hall and inside stairway** in every residential structure or dwelling unit shall be adequately lit with an illumination of at least five lumens per square foot in the darkest portion of the normally traveled stairs and passageways.

5. **All exterior exits and entryways** are required to be illuminated a minimum of one footcandle at grade level for security.
6. **Exterior lighting** at garages is required to be adequate so as to not endanger health or safety. An average of one footcandle at the pavement is required. Exterior lighting must be in conformance with other city codes.
7. **Basement:** One lighting outlet is required for each 200 square feet of floor space. At least one of the required basement lighting outlets shall be switched from the head of the stairs.
8. **Smoke Detectors:**
 - a. All single-family dwelling shall have a hard-wired (120 volt electrical, not battery) battery-backup smoke detector installed near (not in) the bedrooms. If there are legal bedrooms on more than one level, the detector shall be installed on the level that has the greater number of bedrooms. If there are an equal number of bedrooms on more than one level, the detector shall be installed on the upper level near the bedrooms.
 - b. If the project includes building construction that requires a Building Permit, additional hard wired interconnected and/or battery-type smoke detectors are required per the Building Code.
9. **Metallic Light Fixtures (Luminaries):** If within five feet horizontally or eight feet vertically of grounded surfaces (metallic piping, concrete floor, etc.) must be grounded.
10. **Residential Closet Lights:** All closet lights must either be a florescent fixture (luminaries) or an enclosed incandescent fixture of the types required by the present Electrical Code. Fixtures must not be directly over the storage area in a closet; they must either be moved or eliminated and blanked off.
11. **Service conduits run in outside walls:** If a 100-ampere service is changed from fuses to circuit breakers, the meter is already outside, and the existing conduit is run in the outside wall, the conduit may be re-used. If the service is an upgrade (increase in amperage), conduit in the wall may not be re-used.

1.02 SECTION INCLUDES:

- A. Electrical work to meet requirements of Bulletin 80-1 reproduced above.
- B. Overhead Garage Door Opener: see Section 08 3323
- C. Certify Electrical Distribution: Electrician shall inspect all exposed wiring, motors, fixtures and devices for malfunction, shorts and hosing code compliance. Non-functioning and dangerous equipment and wiring shall be replaced
- D. Install new electrical to garage
- E. Provide switching for three exterior outdoor lights
- F. New electrical wiring, outlets, lighting and switching at kitchen to meet current electrical code.

PART 2 PRODUCTS

2.01 APPLICATIONS

- A. Conduit and Cable: Provide materials that meet code requirements.
- C. Devices and Cover plates: Provide all White devices. Provide heavy duty residential grade devices.
- D. Smoke/CO Detectors: Hard wired w/ battery-back up type units
- E. Doorbell system: Repair existing or provide a new system containing a low voltage transformer, power connection, buzzer and front door button.
- F. Equipment Wiring: Provide the correct power supply on separate circuit, with over current protection including all connectors for the water heater, boiler, microwave, refrigerator, dishwasher
- G. Bathroom Vent Fan/Light Fixture: comply with NEC specification

1. Switch: Light and fan shall use same switch with a time delay for fan such as the EFI/Light Time Delay Switch Part # 5100.505 or equipped with a humidistat sensor.
 2. Ducting: Install 4" metal duct and vent to the exterior, verify location with project manager, using a 4" hooded vent with damper.
 - a. All duct seams shall be sealed with duct mastic. Insulate duct work with vinyl or foil faced R-6 minimum duct insulation.
 - b. Repair any damage to the ceiling installation or air seal fan/light assembly to the ceiling with low VOC caulk.
- H. GFCI Receptacles: Verify required locations throughout.

2.02 MATERIALS

- A. All materials shall be UL approved and/or National Electrical Code rated.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Building Codes: The extent of electrical work indicated in the Scope of Work is stated generally to indicate end result of work. The Contractor is responsible for making a thorough inspection of the site to determine the full extent of work required to achieve the end results. All electrical work must meet current building code requirements and must pass City of Saint Paul field inspection. Any work that does not meet codes or pass inspection must be corrected to the satisfaction of the city inspector at no additional cost to the Owner.
- C. Remove and dispose of all abandoned wiring and devices. Modify existing wiring and devices as indicated.
- D. All new wiring, when passing through living areas, shall be concealed.
- E. All receptacles and switches to be white, replace beige and other
- F. All new outlet covers and switch plates to be white
- G. All drilling, cutting and fastening shall be neat and true, and shall not critically damage framing members.
- H. All patching shall match the surrounding surface.

END OF SECTION

**SECTION 26 5101
LIGHTING**

PART 1 GENERAL

\$ _____

1.01 LOCATIONS

- A. Exterior
 - 1. Retain ceiling light at front porch
 - 2. Wall-mount light at side door
 - 3. Garage security light
- B. Basement
 - 1. (4) new porcelain ceiling fixtures
 - 2. Light at basement stairs, switched from top and bottom
- C. First floor
 - 1. (8) ceiling lights: living room, dining, (2) @ kitchen, hallway, bedroom, laundry, walk-in
 - 2. Pendant at kitchen sink
 - 3. Wall-mount light at bathroom sink
 - 4. Light at stairs to second floor, switched from top and bottom
- D. Second floor
 - 1. (3) ceiling lights: each bedroom, bathroom
 - 2. Wall-mount light at bathroom sink
- E. Compact fluorescent bulbs per NEC energy specification
- F. See selection sheet for lamp fixture information

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- C. Wire mold and surface mount boxes for receptacles.
- D. Install luminaires plumb and square and aligned with building lines and with adjacent luminaires.

END OF SECTION

SECTION 28 1600
INTRUSION DETECTION

PART 1 GENERAL

\$ _____

1.01 LOCATIONS

- A. Provide and install a security system, to include a minimum of hardwired control panel with cellular transmitter (no phone line required), 2 hardwired keypads, two (2) Door sensors, motion detector, low temperature monitoring and siren.
- B. Include a monthly monitoring service at a rate not to exceed \$50/month.
- C. Contracts for monitoring must be month to month, not an extended period.
- D. Monitoring shall begin upon completion of construction and be paid by Owner.

1.02 QUALITY ASSURANCE

- A. Conform to requirements of NFPA 70.
- B. Products: Furnish products listed and classified by Underwriters Laboratories Inc. as suitable for purpose specified and indicated.

PART 2 PRODUCTS

2.01 ALARM CONTROL PANEL

- A. Control Panel: Modular construction with surface wall-mounted enclosure.
- B. Power supply: Adequate to serve control panel modules, remote detectors, and alarm signaling devices. Include battery-operated emergency power supply with capacity for operating system in standby mode for 24 hours.

2.02 INITIATING DEVICES

- A. Magnetic Switches:
- B. Motion Detectors:

2.03 SIGNAL DEVICES

- A. Alarm Bells: NFPA 72, electric single stroke, 8 inch (200 mm) bell with operating mechanism behind dome. Sound Rating: 81 dB at 10 feet (3 M).

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Use 18 AWG minimum size conductors for detection and signal circuit conductors. Install wiring in cable.
- C. As soon as System is installed contact HRA Project Manager Roxanne Young at Roxanne.Young@ci.stpaul.mn.us to inform her to apply for a security permit.

3.02 CLOSEOUT ACTIVITIES

- A. Demonstrate normal and abnormal modes of operation, and required responses to each.

END OF SECTION

SECTION 31 2200
GRADING

PART 1 GENERAL

\$ _____

1.01 LOCATIONS

- A. Regrade around new garage and prepare for new walkway, concrete apron, and new sod.

PART 3 EXECUTION

3.01 ROUGH GRADING

- A. When excavating through roots, perform work by hand and cut roots with sharp axe.

3.02 FINISH GRADING

- A. Build up ground slope at foundation wall using clean fill.
- B. New fill shall have an approximate slope of $\frac{1}{4}$ " per foot and extend away from the foundation wall approximately five feet.
- C. Remove roots, weeds, rocks, and foreign material while spreading.
- D. Vigorously tamp or roll new fill to achieve settled depth.
- E. Fine grade topsoil to eliminate uneven areas and low spots. Maintain profiles and contour of sub grade.

END OF SECTION

**SECTION 32 1313
CONCRETE PAVING**

PART 1 GENERAL

\$ _____

1.01 LOCATIONS

- A. New concrete walk in rear/side yard per landscape drawing
- B. Garage apron

PART 2 PRODUCTS

2.01 PAVING ASSEMBLIES

- A. Concrete Sidewalks: 3,000 psi (20.7 MPa) 28 day concrete, 4 inches (100 mm) thick

2.02 FORM MATERIALS

- A. Wood form material, profiled to suit conditions.

PART 3 EXECUTION

3.01 FORMING

- A. Place and secure forms to correct location, dimension, profile, and gradient.

3.02 COLD AND HOT WEATHER CONCRETING

- A. Follow recommendations of ACI 305R when concreting during hot weather.
- B. Follow recommendations of ACI 306R when concreting during cold weather.

3.03 FINISHING

- A. Sidewalk Paving: Light broom, texture perpendicular to direction of travel with troweled and radiused edge: 1/4 inch (6 mm) radius.

END OF SECTION

SECTION 32 9223
SODDING

PART 1 GENERAL

\$ _____

1.01 LOCATIONS

- A. New sod at areas of yard indicated on the landscape plan
- B. New sod at all existing bare spots
- C. Resod all areas impacted by construction activities or grading

PART 2 PRODUCTS

2.01 MATERIALS

- A. Sod: TPI, Certified Turf grass Sod quality; cultivated grass sod; type indicated in plant schedule on Drawings; with strong fibrous root system, free of stones, burned or bare spots; containing no more than 5 weeds per 1000 sq ft (100 sq m). Minimum age of 18 months, with root development that will support its own weight, without tearing, when suspended vertically by holding the upper two corners.

PART 3 EXECUTION

3.01 LAYING SOD

- A. Moisten prepared surface immediately prior to laying sod.
- B. Lay sod immediately after delivery to site to prevent deterioration.
- C. Lay sod smooth and tight with no open joints visible, and no overlapping; stagger end joints 12 inches (300 mm) minimum. Do not stretch or overlap sod pieces.
- D. Water sodded areas immediately after installation. Saturate sod to 4 inches (100 mm) of soil.

3.02 MAINTENANCE

- A. General Contractor is responsible for the maintenance of sod until project closeout.

END OF SECTION

SECTION 32 9300

PLANTS

PART 1 GENERAL

\$ _____

1.01 LOCATIONS

- A. Quantities, types and locations indicated on the landscape plan

PART 2 PRODUCTS

2.01 PLANTS

- A. Plants: Species, size and quantity identified in Landscape Plan, grown in climatic conditions similar to those in locality of the work.

2.02 MULCH MATERIALS

- A. Mulching Material: Hardwood species wood shavings, free of growth or germination inhibiting ingredients.

PART 3 EXECUTION

3.01 RAINGARDEN INSTALLATION

- A. Remove 18 inches of soil leaving compacted 1 to 3 side slopes rising to finished grade.
- B. Deeply till and break apart basin floor
- C. Add 2 inches of leaf compost and till into soil.
- D. Finish rain garden by hand grading a flat, level basin and 3 to 1 side slope, as indicated on Landscape Plan.
- E. Add 3 inches of shredded hard wood mulch, as with slopes
- F. Install edging as indicated on Landscape Plan.
- G. Ensure that downspout runoff enters the rain garden.

3.02 PLANTING

- A. Set plants vertical according to the Landscape Plan.
- B. Saturate soil with water when the pit or bed is half full of topsoil and again when full.

3.03 MAINTENANCE

- A. Provide maintenance through project close-out. Owner will pay for water.

END OF SECTION